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THE CHOICES PROGRAM

*Explore the Past...Shape the Future
History and Current Issues for the Classroom*

From the Choices Program

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Ending the War Against Japan: Science, Morality, and the Atomic Bomb



THE CHOICES PROGRAM

Explore the Past... Shape the Future

History and Current Issues for the Classroom

WATSON INSTITUTE FOR INTERNATIONAL STUDIES
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CHOICES for the 21st Century Education Program

July 2007

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The Choices for the 21st Century Education Program develops curricula on current and historical international issues and offers workshops, institutes, and in-service programs for high school teachers. Course materials place special emphasis on the importance of educating students in their participatory role as citizens.

The Choices for the 21st Century Education Program is a program of the Thomas J. Watson Jr. Institute for International Studies at Brown University.

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Acknowledgments

Ending the War Against Japan: Science, Morality and the Atomic Bomb was developed by the Choices for the 21st Century Education Program with the assistance of the research staff at the Watson Institute for International Studies, scholars at Brown University, and other experts in the field. We wish to thank the following researchers for their invaluable input:

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We wish to thank Don Bakker for his assistance in developing and writing the first edition of this unit.

Ending the War Against Japan: Science, Morality and the Atomic Bomb is part of a continuing series on international public policy issues. New units are published each academic year and all units are updated regularly.

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THE CHOICES FOR THE 21ST CENTURY EDUCATION PROGRAM is a program of the Watson Institute for International Studies at Brown University. CHOICES was established to help citizens think constructively about foreign policy issues, to improve participatory citizenship skills, and to encourage public judgement on policy issues.



The Watson Institute for International Studies was established at Brown University in 1986 to serve as a forum for students, faculty, visiting scholars, and policy practitioners who are committed to analyzing contemporary global problems and developing initiatives to address them.

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Introduction: Values and Ethics in Warfare

War is hell!" That was the declaration of General William Tecumseh Sherman in early 1865 as he surveyed the devastation brought by his sixty thousand Union troops to the people of Georgia during the closing months of the Civil War.

Like leaders in other times and places, President Abraham Lincoln had approved the policy of waging war on civilians in order to hasten the end of a long and bloody struggle. Sherman's Union troops devastated the towns in their path. Unlike previous campaigns in which civilian losses were unintentional, Sherman specifically targeted the property of the local people. Although Lincoln was deeply troubled by Sherman's campaign against the South, he believed he had to break the fighting spirit of the Confederacy.

What factors and questions do democracies have to consider during war?

War raises agonizing moral questions. In a democracy, the decisions faced by policymakers and the public are particularly complex. To understand the implications of war, we must begin with values.

Values are the beliefs, customs, and relationships that individuals or societies believe are central to their identity, security, and survival. They provide the foundation for the goals and standards that shape our daily lives and guide us in making important decisions. Values also inspire individuals to risk their well-being, even their lives, for a common purpose. During wartime, values serve to unite a society to take up arms to uphold its highest ideals and interests. When a democratic society goes to war, the decisions made and actions taken are not just the responsibility of those in authority; they are the collective responsibility of the people.

Democracies at war thus have a special obligation to confront the "ends-means di-

lemma." Once war has begun, few Americans would deny that bringing the conflict to a speedy and victorious conclusion is a justifiable goal, or end. The moral difficulty comes in deciding which military actions, or means, should be employed to attain a worthy end. Where does a democracy draw the line in the use of violence? How does the end being pursued determine which means are justifiable?

What is the focus of this reading?

In this reading, you will consider one of the most difficult and controversial decisions ever made by a democratic society in wartime: the dropping of two atomic bombs on Japan at the end of World War II. You will travel back to the 1940s and review the events leading up to the bombing. Developments will unfold for you just as they did for U.S. policymakers. Using letters, memoranda, reports, speeches, and other documents, you will follow both the scientific race to harness the power of the atom and the military course of the most destructive war in history. With your classmates, you will reconstruct the debate about the atomic bomb that took place within the administration of President Harry Truman in late July 1945.

The background reading has been designed to help you assess the policy choices considered by the Truman administration. Beginning with examples from ancient history, this reading uses selected examples to trace the evolution of warfare from "total war" involving civilians, through "just war" theory which sought to limit the boundaries of war in the Middle Ages, and finally to the use of aerial bombardment and the return to total war in World War I. Part II traces military developments in World War II and the simultaneous scientific path that led to the construction of the atomic bomb. Together, the readings will help you to understand the complexity of warfare and the role of technology in war.

Part I: A Brief History of War

The ruins of Jericho, one of the world's oldest towns, attest to the ancient origins of warfare. Archaeologists have found that roughly eight thousand years ago Jericho's inhabitants constructed a huge stone wall and dug a moat twenty-four feet wide and eight feet deep to protect themselves from outside attack.

What was “total war” in the ancient world?

The people of Jericho had good reason to be concerned about self-defense. War in the ancient world was often “total war,” with the fighting extending far beyond the battlefield. Not only were the soldiers of a conquered community often killed, but women and children were typically enslaved. The land, livestock, and possessions of the defeated were



For the people of Europe in the Middle Ages, the face of warfare was represented by the Four Horsemen of the Apocalypse—Death, Famine, Pestilence, and War.

divided among the victors as war booty. In the twentieth century, such brutality might be labeled as “genocide,” the planned extermination of a people.

An example of this kind of destruction comes from the Roman Republic, the model from which the founders of the United States borrowed heavily in designing the U.S. Constitution. In the third century B.C., Rome twice defeated Carthage, its North African rival, to gain dominance in the Mediterranean. The Carthaginians were stripped of their colonies and their navy, and were forced to pay large sums of gold and silver to Rome. Nonetheless, many members of the Roman senate feared that Carthage would revive to again threaten Rome, and insisted on nothing less than the total destruction of their long-time foe. In 149 B.C., they put their plan into action. After Carthage turned over hostages and weapons in attempts to appease the Romans, Rome attacked once again. Carthaginians resisted, but eventually they were beaten into submission. The triumphant Romans razed Carthage to the ground, sold the remaining fifty thousand Carthaginians into slavery, and plowed the surrounding fields with salt. The Roman people, who annually voted for their top officials, strongly approved the actions of their leaders and their army. The term “Carthaginian peace” has since been used to describe the utter destruction of an enemy.

How did the Christian church attempt to limit the destructiveness of war during the Middle Ages?

A thousand years later, the Christian church made efforts to limit the devastation caused by war. In 989, a church council began what would later be called the “Peace of God” movement, calling on Christians to refrain from attacking priests and livestock. This protection was soon extended to women, peasants, merchants, persons on their way to church, mills, vines, seeds, and farm implements. The so-called “Truce of God,”

proclaimed in 1017, prohibited fighting from Saturday afternoon until daybreak Monday. The truce period was later extended to include Thursdays, Fridays, and church holidays. Eventually, a church council in 1054 declared, “A Christian who slays another Christian sheds the blood of Christ.”

The Christian church, however, did not embrace pacifism, the absolute rejection of violence. Rather, church officials during the Middle Ages developed the concept of the “just war.” Private wars of aggression by feudal lords seeking personal gain were condemned as unjust. In contrast, church officials viewed wars as just if they were fought to resist attack, restore the peace, punish evil-doers, avenge injuries, prevent injustice, or promote the interests of the church.

How did Christian principles affect battlefield tactics?

The principles laid out by the church influenced not only the decisions of European leaders, but battlefield tactics as well. A formal code of behavior known as chivalry (a word derived from *cheval*, the French word for horse) gained acceptance among the heavily armored mounted knights of Europe in the Middle Ages. The code of chivalry, however, was generally ignored when the foe was a non-Christian or thought to be a Christian heretic (dissenter). In a famous example, King Richard the Lion-Hearted of England ordered the beheading of twenty-seven hundred Muslim prisoners in the twelfth century. According to the rules of chivalry, executing Christian prisoners would have been unthinkable.

Further limits to the violence of war were developed in the 1600s when Dutch scholar Hugo Grotius drew a clear distinction between combatants and non-combatants, as well as between state property used to wage war and private property. The next large-scale war in Europe did not occur until the rise of Napoleon Bonaparte in France.

How did the Napoleonic Wars lead to an acceptance of a return to “total war”?

The Napoleonic Wars of 1796-1815 illustrated the deadly power of new military technologies and the tremendous resources at the disposal of modern states. Until the Napoleonic Wars, European countries had maintained small armies, often staffed by foreign mercenaries. Military campaigns and objectives were limited by modern standards. Before Napoleon, soldiers were more likely to die from disease caused by poor sanitation than from battlefield action.

In contrast, Napoleon mobilized all of France and instilled a sense of patriotism in his troops. The huge national armies that fought during the Napoleonic Wars recalled the practices of ancient times, when an entire city-state or kingdom took up arms. Roughly one million troops died during nearly two decades of fighting. In addition, civilians suffered greatly, since crops and livestock were confiscated to support the military forces on the march throughout Europe. The British led a naval blockade of France that was intended to deprive Napoleon of military supplies.

In the years after Napoleon’s final defeat, Karl von Clausewitz, a military theorist from Prussia, wove the lessons of the Napoleonic Wars into an influential book that further widened the field of battle. He focused attention on the military significance of the morale of the civilian population. Just as in ancient times, Clausewitz justified efforts to destroy the will of the enemy as a military necessity—a lesson taken to heart during the American Civil War.

“War is...a continuation of policy by other means.”

—Karl von Clausewitz

Why is the American Civil War referred to as the first modern war?

The American Civil War has been called the first modern war. Improvements in artil-



Guernica, a painting by Pablo Picasso, depicts the terror and suffering caused by a German bombing raid against the villagers of Guernica during the Spanish Civil War.

lery and more accurate rifles meant that troops were more vulnerable than ever when they attacked heavily fortified positions. Battlefield casualties reached new heights. During the three-day battle at Gettysburg in 1863, nearly fifty thousand soldiers were killed or seriously wounded.

In the fall of 1864, General Sherman's march through Georgia brought home the horrors of war to the civilian population of the Confederacy. Although they met little resistance, Sherman's Union troops left a path of devastation sixty miles wide from Atlanta to the coastal city of Savannah. Farm buildings, crops, homes, and virtually everything else of possible military value were burned. The destruction of property was intentional, unlike in previous military campaigns.

How did the international community attempt to reduce civilian casualties?

The period between the end of the American Civil War in 1865 and the outbreak of World War I in 1914 saw increased international concern about the conduct and destructiveness of war. The St. Petersburg Declaration in 1868 outlawed certain bullets as "inhumane." The International Peace Conferences at the Hague in the Netherlands

in 1899 and 1907 led to treaties that affirmed earlier attempts to govern the rules of war. The 1907 Hague Convention on Land Warfare, for example, reinforced the distinction between civilian and military targets.

Article 25 prohibited "the attack or bombardment, by whatever means, of towns, villages, dwellings, or buildings which are undefended." Article 27 declared that "In sieges and bombardments all necessary steps must be taken to spare, as far as possible, buildings dedicated to religion, art, science, or charitable purposes, historic monuments, hospitals and places where the sick and wounded are collected."

How did technological advances contribute to destruction in World War I?

The principles of the Hague treaties, however, did little to hold down the death toll in World War I. Technological advances and new military strategies heightened the toll on civilians and soldiers. From 1914 to 1918, ten million soldiers died on the battlefield and at least five million civilians perished from disease and starvation. Submarines, naval blockades, and the first warplanes extended the suffering of the war well beyond the front lines.

Initially, aerial bombardments targeted military installations. However, unpredictable winds, the inaccuracy of bomber pilots, and the fact that military targets were often located in towns and cities exposed civilians to attack from the sky. The first significant incident of aerial bombardment occurred in May 1917, when twenty-one German Gotha biplane bombers struck the British town of Folkestone. The German pilots had intended to raid military targets near London, but their fuel supplies ran low before they reached their destination. Instead, they tried to release their bombs over a military camp housing Canadian troops several miles from Folkestone. While no one in the camp was injured, ninety-five townspeople were killed.

Within weeks, German planes had begun regularly bombing British towns and cities, especially London. British bomber pilots soon staged their own raids over Germany. By the

end of the war in November 1918, German and British pilots had dropped 100 tons of explosives and killed or wounded more than seven thousand civilians. The technology of aerial bombardment had also progressed rapidly. The largest bombers at the end of the war possessed a wingspan of 138 feet, were powered by four engines, and were capable of dropping a two thousand-pound bomb.

“You must not suppose that we set out to kill women and children. We have higher aims. You would not find one officer in the German Army or Navy who would go to war to kill women and children. Such things happen accidentally in war.”

—World War I German bomber pilot

While aerial bombardment in World War I inflicted little damage on military targets,

U.S. War Department: 1940 Principles of War

In 1940, the U.S. War Department issued a revised code governing the actions of U.S. armed forces in wartime. The code was based on the assumption that “Among civilized nations the conduct of war is regulated by certain well-established rules known as the rules or laws of war.”

According to the War Department, the conduct of U.S. soldiers should be guided by three principles:

- The principle of military necessity, under which, subject to the principles of humanity and chivalry, a belligerent is justified in applying any amount and any kind of force to compel the complete submission of the enemy with the least possible expenditure of time, life, and money [Under the principle of military necessity, U.S. forces would be justified in destroying civilian property and blockading transportation and communications routes to defeat an enemy, but not in indiscriminately killing civilians.];
- The principle of humanity, prohibiting employment of any such kind or degree of violence as is not actually necessary for the purpose of the war [Under the principle of humanity, U.S. forces would be justified in attacking military camps and ammunition depots, but not hospitals, schools, and other non-military targets.]; and
- The principle of chivalry, which denounces and forbids resort to dishonorable means, expedients, or conduct [Under the principle of chivalry, U.S. forces would be justified in fighting with all of their strength, but not in using poison gas or torturing prisoners.].

Although no international body existed to enforce the rules of war, the War Department planned to strictly observe them in the event of conflict and expected “all civilized nations” to do the same. Exceptions to the code were permitted only to carry out “legitimate reprisals for illegal conduct by the enemy.”

the attacks left civilians terrified. Military planners were quick to appreciate how aerial bombardment could weaken the morale of an enemy.

How did nations attempt to deal with the unprecedented killing of World War I?

World War I renewed the long-standing debate about the morality of war. In democratic societies in particular, the public was stunned by the failure of Western civilization to prevent such unprecedented slaughter. Many hoped to harness the moral force of public opinion to make World War I “the war to end all wars.”

This feeling influenced the course of international relations in the 1920s. International conferences were convened to halt the build-up of naval armaments, poison gas, and other weapons. The United States and France forged a treaty in 1928, known as the Kellogg-Briand Pact, to outlaw war. Eventually, the treaty gained the signatures of sixty-four countries, calling on them to “condemn recourse to war for the solution of international controversies, and renounce it as an instrument of national policy.”

The events of the 1930s showed that good intentions were not enough. The Spanish Civil

War of 1936-39 gave the world a preview of what was to come. Nazi Germany strongly supported the rebel fascist forces of General Francisco Franco and sent several squadrons of bombers to fight Spain’s republican government. In March 1938, German bombers struck the government stronghold of Barcelona while Franco’s forces pounded the city with ground artillery. Much of the world was outraged by the Nazi air raid. Secretary of State Cordell Hull expressed American anger when he asserted that “no theory of war can justify such conduct.”

Over the next several years, the Kellogg-Briand Pact would do little to stop the aggression of Japan, Germany, and Italy. Rather, the resolve of the democratic states to maintain the peace and regulate warfare was called into question. Distinctions between combatant and non-combatant, soldier and civilian, were virtually erased, despite a new U.S. Code of Conduct issued in 1940. Eventually, all major countries involved in World War II were to wage the total war of the ancient world. The concept of military necessity was to be expanded to include almost any action designed to weaken the ability of the enemy to resist.

Part II: World War II and the Atomic Bomb

Breakthroughs in aeronautics during the two decades between World War I and World War II raised new possibilities for air warfare. Scientists and engineers dramatically increased the speed, size, and range of aircraft. The fragile biplanes of World War I gave way to sturdy, reliable flying machines. By the late 1930s, most of the world's strongest countries were building up their air forces and working air power into their overall military strategies.

The European War

Air power was an integral element of Nazi Germany's military strategy in World War II. German generals trained their armies to quickly overcome their opponents through a *blitzkrieg*, or "lightning war." On the ground, German offensives were spearheaded by fast-moving tanks. In the air, the Nazi Luftwaffe (air force) struck military positions to break down enemy defenses.

How did the Nazis use air power in World War II?

In September 1939, Poland became the first victim of the German *blitzkrieg*. Within a few weeks, Nazi armies overran much of Poland and destroyed many of the country's largest cities. The Luftwaffe intentionally bombed urban centers to terrorize Poland's civilian population. The leaders of the United States, Britain, France, and other Western democracies were stunned by the speed and ruthlessness of the German assault. They were forced to recognize that the rulers of the Axis alliance—Germany, Italy, and Japan—cared little for established rules of war or individual rights. German

leader Adolf Hitler began carrying out plans to enslave millions of Slavs and exterminate Jews as his troops were invading Poland.

In the spring of 1940, Hitler turned his war machine on Western Europe. The Nazis used many of the same tactics that had smashed Polish resistance. The first city to be intentionally bombed in the West was Rotterdam in the Netherlands. In May 1940, fifty German bombers dropped ninety-four tons of explosives on Rotterdam's center, killing one thousand civilians. The British retaliated by bombing Germany's highly industrialized Ruhr Valley.

After the fall of France in June 1940, Hitler focused his attention on Britain. The Nazis planned to invade Britain in "Operation Sea Lion," but first they hoped to soften up British defenses with an intensive bombing campaign. In August 1940, the Luftwaffe began bombing British airfields and aircraft factories. The bombing raids, conducted during daylight hours to enable German pilots to find their targets, took a heavy toll on the Luftwaffe.

In the fall of 1940, Nazi strategists switched to less accurate nighttime bombing and increasingly took aim at Britain's cities,



Children sit outside what used to be their home in London, September 1940.

Photo courtesy of National Archives and Records Administration. Used with permission.

especially London and the surrounding areas. Their aim was to destroy the British will to resist rather than Britain's military might. For nine months, Londoners were forced to spend many of their nights huddled in air raid shelters. By May 1941, nearly forty-four thousand civilians had been killed in Britain. After a particularly devastating attack of the "London blitz" in 1940, British Prime Minister Winston Churchill ordered the British air force to retaliate by launching raids on Berlin, Germany's capital.

How did Roosevelt respond to the military tactics of the Nazis?

U.S. President Franklin D. Roosevelt was shocked by the military tactics of the Nazis. Soon after Germany's invasion of Poland, he strongly condemned Nazi bombing raids on civilians.

"The ruthless bombing from the air of civilians in unfortified centers of population...has sickened the hearts of every civilized man and woman, and has profoundly shocked

the conscience of humanity....I am therefore addressing this urgent appeal to every Government which may be engaged in hostilities publicly to affirm its determination that its armed forces shall in no event, and under no circumstances, undertake the bombardment from the air of civilian populations."

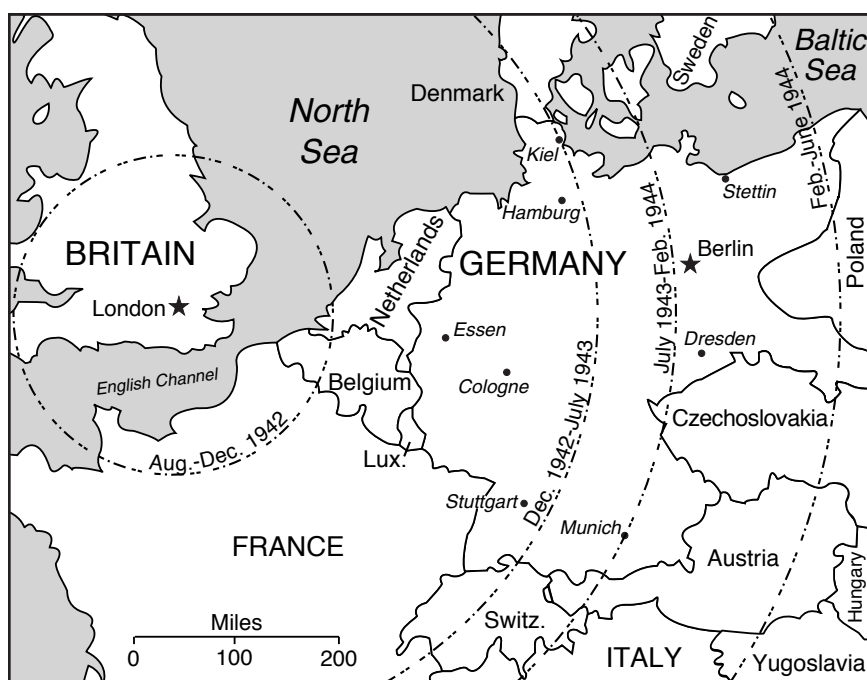
—President Franklin D. Roosevelt

By the time the United States entered the war in December 1941, Roosevelt's plea had been rejected by the Axis and the Allies alike. Hitler's invasion of the Soviet Union in June 1941 had introduced a new level of barbarity to the conflict. In the first six months of the German assault, one million Soviet troops were killed or wounded. Another 3.5 million Soviets were taken prisoner; more than 90 percent of them were to die in captivity.

The scope of the war against the Allies in Europe was characterized not just by German bombing raids but by submarine attacks throughout the Atlantic as well as land warfare from North Africa to the suburbs of Moscow. This terrified Allied citizens and gave their

leaders great pause. Many worried that the Axis powers might prevail. It was under these conditions that American and British military strategists developed more accurate and more deadly bombing, seeking to cripple war industries and to force the Nazis to concentrate on defending their homeland.

The tremendous battles on the Eastern Front relieved pressure against the British. At the same time, the enormous industrial potential of the United States soon tipped the balance of power in favor of the Allies. In 1942, the Allies were already



The dotted lines on this map indicate the typical range of Allied bombers during the War.

gaining air superiority on the Western Front. During the course of the entire year, only twenty-seven Londoners lost their lives in German bombing raids. Meanwhile, British and American pilots were increasingly striking the German homeland.

What choices did Allied bombers have when considering when to bomb and whom to target?

Allied policymakers were soon confronted with a moral dilemma. Staging raids in daylight hours allowed British and American pilots to distinguish military targets from residential areas, but left them more vulnerable to German air defenses. Bombing at night was safer for the Allied pilots, but accuracy was lost. A British study of nighttime bombing conducted early in the war concluded “that although Bomber Command believed they had found the target, two-thirds of the crews actually failed to strike within five miles of it.”

Ultimately, the British decided in favor of nighttime attacks. As early as February 1942, Arthur Harris, the chief of British Bomber Command, gained approval from Churchill to target Germany’s industrial cities and their civilian populations. The policy of dropping bombs on large areas rather than narrowly defined targets became known as “strategic bombing.” British Bomber Command developed a precise formula for carrying out raids on German cities, calculating that one ton of high explosives was needed for every eight hundred inhabitants.

“It has been decided that the primary objective of your [Allied] operations should now be focused on the morale of the enemy civil population and in particular, of the industrial worker.”

—Arthur Harris, British Bomber Command

The suffering caused by British bombing quickly surpassed that of the London blitz. A British attack on the German port city of Lubeck in March 1942 marked the first raid in which the number of dead and wounded

exceeded ten thousand people. In May 1942, the British began launching a thousand bombs or more against a single target. Their first target was the German city of Cologne.

How did technological experimentation enable the British to succeed in efforts to destroy German industrial centers?

British military officials also led the way in maximizing the destructiveness of their bombing operations. In 1942, they tested various combinations of high-explosive bombs (which destroy buildings) and incendiary bombs (which start fires). They also experimented with bombing patterns. The British learned that dropping high-explosive bombs splintered wood frame structures and shattered windows, thus providing the fuel and increased air flow necessary to spread fires ignited by incendiary bombs. The British objective was to create a “firestorm” that would engulf virtually an entire city in a blazing inferno.

The first large-scale effort to engineer a firestorm was directed against Hamburg, Germany’s second-largest city, in July 1943. The five-day operation began with wave after wave of Allied warplanes dropping their bombs on target areas marked by flares. The technique, later known as “carpet bombing,” leveled Hamburg sector by sector. The carpet bombing quickly overwhelmed the capacity of the city’s fire-fighting and communications system.

On the third night of the attack, a combination of high temperatures, low humidity, and the increased use of incendiary bombs set the stage for a firestorm. Hurricane-like winds fanned the flames and spread the firestorm over eight square miles of the city. Temperatures within the firestorm rose to more than 1,400 degrees Fahrenheit. Asphalt pavement melted, trapping civilians seeking to escape. Bodies were charred and shrunk into tiny blackened bundles. More than forty-five thousand Germans, mostly civilians, perished that night.

“The total destruction of this city [Hamburg] would achieve immeasurable results in reducing the industrial capacity of the enemy’s war machine. This, together with the effect on German morale, which would be felt throughout the country, would play a very important part in shortening and in winning the war.”

—Order Authorizing “Operation Gomorrah”

Why was Dresden bombed?

The Allied bombing of German urban industrial centers continued to escalate after the Hamburg firestorm. In the United States and Britain there was little public protest against the strategic bombing campaign. Germans had earned a reputation for cruelty among Americans in the early stages of the war, especially during the London blitz. Furthermore, American newspapers generally did not report on civilian casualties in the Axis countries.

While Churchill publicly referred to the policy of “dehousing” German workers, neither he nor Roosevelt told their peoples about the extent or the intent of the Allied bombing of German population centers. The war objective remained, as President Roosevelt stated after the Casablanca Conference in January 1943, “a policy of fighting hard on all fronts and ending the war as quickly as we can on the uncompromising terms of unconditional surrender.”

By early 1945, Adolf Hitler’s ambitions had been all but smashed. Allied forces were marching into Germany from the west while the Soviet army was pushing back the retreating Nazis in the east. In February 1945, the Allies dealt a further blow to Germany by bombing the eastern German city of Dresden. Known best for its beautiful medieval architecture, Dresden was of little military significance and had been spared from earlier attack. Nonetheless, to ensure Germany’s unconditional surrender and to assist the Soviet advance in the east, the Allies staged one of the largest raids of the war against the city, involving nearly twenty-eight hundred

aircraft. The firestorm that resulted was visible for two hundred miles. Approximately one hundred thousand Germans, mostly civilians, were killed—the largest loss of life in a single day up to that point of the twentieth century. Three months later, on May 7, 1945, Germany surrendered unconditionally after U.S. and Soviet forces met in central Germany.

The War in the Pacific

In East Asia, the world war had begun with the Japanese invasion of China in August 1937. Although Japan had signed international agreements to prevent war, the Japanese government in the 1930s was increasingly controlled by forces determined to carve out a regional sphere of influence through military might. In 1931, they had seized control of the rich coal and iron ore reserves in the northeastern Chinese province of Manchuria to support their country’s industrialized economy.

When the Japanese plunged deeper into China in 1937, President Roosevelt vigorously denounced their attack. The growing American economic stake in China, as well as the activities of American missionaries, caused



Japan drives through Manchuria to reach the center of China.

Reg Manning in *The Arizona Republic*.

the United States to take China's side in the international arena.

The Japanese image in the United States was tarnished early in the Sino-Japanese war. In the fall of 1937, Japan staged bombing raids against the Chinese commercial center of Shanghai. American newspapers reported widely on Japanese efforts to terrorize the city's residents and printed moving photos of orphaned children and maimed civilians. A few weeks later, the Japanese captured Nanjing, the Chinese capital. As hundreds of foreign residents watched, Japanese troops took part in a rampage of murder, rape, and looting against the civilian population. More than two hundred thousand Chinese were killed and the city was burned to the ground. The American press labeled the atrocity the "Rape of Nanking."



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Why did the United States enter the War?

The Japanese brought war to the United States on December 7, 1941, with their surprise attack on the U.S. naval base at Pearl Harbor, Hawaii.

“Yesterday, December 7, 1941—a day which will live in infamy—the United States of America was suddenly and deliberately attacked by naval and air forces of the Empire of Japan....It [is] obvious that the attack was deliberately planned many days or even weeks ago. During the intervening time the Japanese government has deliberately sought to deceive the United States by false

statements and expressions of hope for continued peace.... Always we will remember the character of the onslaught against us. No matter how long it may take us to overcome this premeditated invasion, the American people, in their righteous might, will win through to absolute victory.... We will not only defend ourselves to the uttermost but will make very certain that this form of treachery shall never again endanger us.”

—President Franklin D. Roosevelt

Although U.S. military intelligence had predicted a Japanese offensive in the Pacific, the Japanese did not officially declare war on the United States until after their warplanes had struck Pearl Harbor. Americans were outraged at the breach of fair play. Both U.S.

policymakers and the general public had assumed that America's neutrality would not be violated, even by the Axis. Once and for all, the Japanese had defined themselves in American eyes as an evil, treacherous enemy willing to defy accepted international standards.

What contributed to U.S. attitudes about Japan?

Events during the first few months of the war hardened American attitudes toward Japan. In the Philippines, American soldiers who surrendered were treated mercilessly by their Japanese captors. More than seven thousand Allied prisoners of war died during what came to be known as the "Bataan Death March." As was the case with the war in Europe, many felt that fierce Japanese tactics might overwhelm American efforts.

Never before in U.S. history had an enemy triggered such hatred as the Japanese. In the press, radio, and film, the Japanese were typically depicted as vicious and heartless. Newspaper political cartoons portrayed them as apes, monkeys, and vermin. Japanese-Americans were rounded up and placed in internment camps.

American hatred toward the Japanese shaped U.S. policy as well. Prominent voices within the Roosevelt administration pressed for the complete annihilation of Japan. Admiral William Leahy, Roosevelt's chief of staff, and the editors of the influential *Collier's* magazine compared Japan to Carthage, the mortal enemy of ancient Rome.

Why did the United States bomb Tokyo?

By 1944, the United States was moving rapidly to dismantle Japan's island empire in the Pacific. After the capture of Guam, Saipan, and Tinian, the United States built bases for long-range bombers and began an intense air campaign against Japanese cities. As was the case in the air war against Germany, military planners experimented with different bombing tactics in order to maximize the damage inflicted on Japan. Unlike German urban centers, where most civilians lived in brick and stone

buildings, Japanese cities contained sprawling areas of wooden houses. General Curtis LeMay and his staff realized that American bombers delivering largely incendiary loads could reproduce the firestorm phenomenon of Hamburg and Dresden.

In March 1945, an air raid on Tokyo, Japan's capital, demonstrated the awesome power of the U.S. bombing campaign. The targets were the industrial districts of Tokyo, where factories were often flanked by working-class neighborhoods. Since the labor and morale of Tokyo's workers were viewed as central to Japanese resistance, U.S. officials believed that the "necessity of war" concept justified their decision to strike against Japanese civilians.

More than three hundred B-29 superfortress bombers, each carrying two tons of incendiaries packed in 100-pound and 6-pound gelled gasoline (napalm) bombs, descended on Tokyo. At least fifteen square miles of the city were consumed in the resulting firestorm. A column of superheated air rose into the sky, generating turbulence that flipped over U.S. bombers flying more than one mile above Tokyo. In the first six hours of the firestorm, more than one hundred thousand people died.

LeMay was encouraged by the attack on Tokyo. Before the month was over, he ordered the firebombing of three more Japanese cities. By the end of the war, LeMay had ordered the firebombing of sixty-four Japanese cities. The assault came to a temporary halt only when the supply of bombs was exhausted.

What was fighting like in the Pacific islands?

Despite the ghastly loss of life suffered by Japanese civilians from the air war in the spring of 1945, most U.S. strategists assumed that the United States would have to invade Japan's home islands to force the unconditional surrender of their enemy. Japanese resistance was expected to be ferocious. Island battles in the Pacific in 1944 and 1945 had already given American military officials an idea of what awaited their troops.

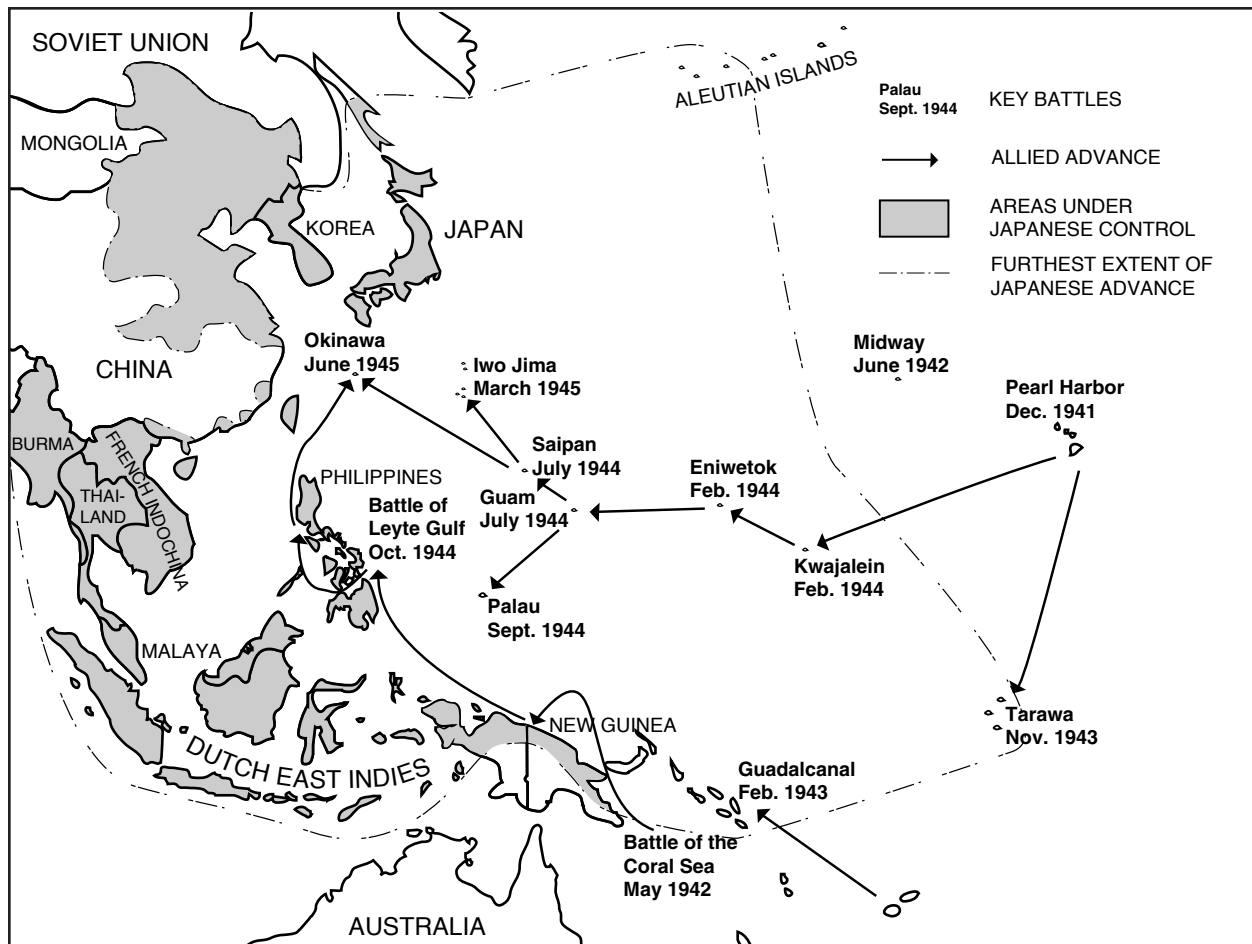
On the island of Saipan and its smaller neighbor, Tinian, thirty thousand Japanese soldiers died trying to prevent U.S. marines from gaining a base to launch air raids against Japan. When American victory was certain, twenty-two thousand Japanese civilians on the islands, many of them women and children, committed suicide by jumping off high cliffs. Japanese officials had sought to convince the civilians that they would be tortured or raped if they fell into American hands.

The island of Iwo Jima was still closer to Japan and was in fact a Tokyo prefecture (a district or neighborhood), making it an essential part of Japan in Japanese eyes. Japanese fighter pilots flew from Iwo Jima's two airfields to intercept American B-29 bombers headed toward Japanese cities. The order from Tokyo was that the island had to be held at all costs. When U.S. marines landed on Iwo Jima in February 1945, they encountered the bloodi-

est fighting in Marine Corps history. Nearly five thousand of the attacking Americans were killed and more than twenty thousand were wounded in the five-week struggle. Among the Japanese defenders, more than eighteen thousand died, often by suicide. Only one thousand Japanese were taken prisoner.

According to the traditional Japanese warrior code of *bushido*, to surrender was to break the bonds of duty and obligation that linked the soldier to his divine emperor and to his family. Death was preferred over dishonor. In addition, many Japanese troops believed that Allied forces would kill them if they surrendered. In the case of certain American and Australian units, Japanese fears were in fact justified.

After the fall of Iwo Jima, the island of Okinawa became the next inferno in the Pacific. Again, suicide claimed the lives of tens of thousands of Japanese soldiers during the



battle in the spring of 1945. In all, 185,000 Japanese troops died defending Okinawa, located less than five hundred miles from Japan's main islands. The United States lost 12,500 soldiers on Okinawa, the highest number of deaths in the island campaign.

In addition to the ground fighting, U.S. ships involved in the island landings had to fend off a desperate wave of suicide air attacks. Known as *kamikaze*, meaning "divine wind," Japanese aviators loaded their airplanes with explosives and tried to crash them into enemy ships or aircraft. Beginning in the fall of 1944, hundreds of kamikaze pilots sacrificed themselves in suicide missions against Allied forces.

"I know the Japanese intimately. The Japanese will not crack. They will not crack morally or psychologically or economically, even when eventual defeat stares them in the face. They will pull in their belts another notch and fight to the bitter end. Only by utter physical destruction or utter exhaustion can they be defeated. That is the difference between the Germans and the Japanese. That is what we are up against in fighting Japan."

—Joseph Grew,
former U.S. Ambassador to Japan

With each step toward the Japanese homeland, the American casualty rate climbed. In the first thirty-one months after Pearl Harbor, 106,000 Americans either died or were severely wounded in the Pacific war. From July 1944 to July 1945, U.S. casualties topped 185,000.

What were the concerns about an invasion of Japan?

Estimates about the cost of an invasion of Japan's main islands varied widely. General Douglas MacArthur, who had been named to command the invasion force, predicted in June 1945 that his troops would suffer about ninety-five thousand casualties, one-third of them deaths, in the first ninety days of the opera-

tion. In contrast, leaders of the navy and air force put forth much higher estimates, warning that as many as five hundred thousand Americans would be killed or wounded in an invasion of Japan.

There were new diplomatic calculations to be made too. With Germany defeated, the Soviet Union was now prepared to enter the war in Asia. At the Yalta Conference in February 1945, Soviet leader Josef Stalin promised President Roosevelt that his country would join the fight against Japan within three months of Germany's surrender. At the time, U.S. officials welcomed Soviet participation. By the summer of 1945, however, relations between the two wartime allies were growing increasingly strained, and the United States feared the Soviets' hold on Eastern Europe as well as its threat to China.

The Development of the Atomic Bomb

The bitter struggle of the Second World War fueled the quest to build an atomic bomb. Scientists in Europe and the United States had begun work on the question of nuclear energy in the first decades of the twentieth century as an extension of their studies on atomic structure and radioactivity. In the 1930s Hungarian physicist Leo Szilard suggested the possibility of using the neutron, a part of the atom, to split the nucleus, or center, of another atom into two smaller parts. This process, called fission, would release energy. The splitting of the nucleus, according to Szilard, would release additional neutrons, which in turn could split other nuclei. The result would be a self-sustaining nuclear chain reaction. By the end of the decade, scientists had made important strides toward triggering a nuclear chain reaction. Experiments with uranium demonstrated that fission was possible using an isotope (an element of similar structure but with different mass) of uranium called U-235, and the energy released from that reaction would be tremendous.

In April of 1939, the German government undertook limited research into the military

uses of atomic energy. Both policymakers and scientists in the United States and Britain watched Germany's advances in nuclear research with growing anxiety, concerned that Germany might develop a bomb before the Allies could. In July of that year, Leo Szilard, along with his friend and colleague Albert Einstein, helped to write a letter alerting President Franklin Roosevelt that recent experiments with uranium might lead to "extremely powerful bombs of a new type." Just before signing, Einstein commented, "For the first time in history men will use energy that does not come from the sun."

What early progress was made in the development of an atomic bomb?

As a result of the fear of growing Nazi power, the U.S. government began several research projects to investigate the power and potential of nuclear fission. In December 1942 a team led by Italian immigrant Enrico Fermi created a self-sustaining nuclear chain reaction in a squash court under the University of Chicago's field house using a form of uranium that had very little U-235 in it. Although this experiment only produced one-half a watt of energy (less than the power in one candle), it was the first time the energy of the atom had been harnessed by humans.

Scientists would need several pounds of pure U-235 to achieve the critical mass necessary for an effective fission bomb. Natural uranium ore contains only 0.7% U-235, so the extraction process would be difficult and expensive. The British developed a method to collect U-235, but they were concerned that the Nazis might bomb a uranium factory located in England. The United States therefore built a factory on a sixty thousand acre site in Oak Ridge, Tennessee.

Meanwhile, Glen Seaborg, a physicist at the University of California, identified in 1941 another element which could be used for fission—plutonium 239. Pu-239 was cheaper to make than U-235, but it was very radioactive and poisonous to humans. Afraid of a radioactive leak, in January 1943 scientists chose a remote section of southeastern Washington

state as a site for the giant plutonium-generating reactor.

Why did the government combine scientists working on the bomb into a single program?

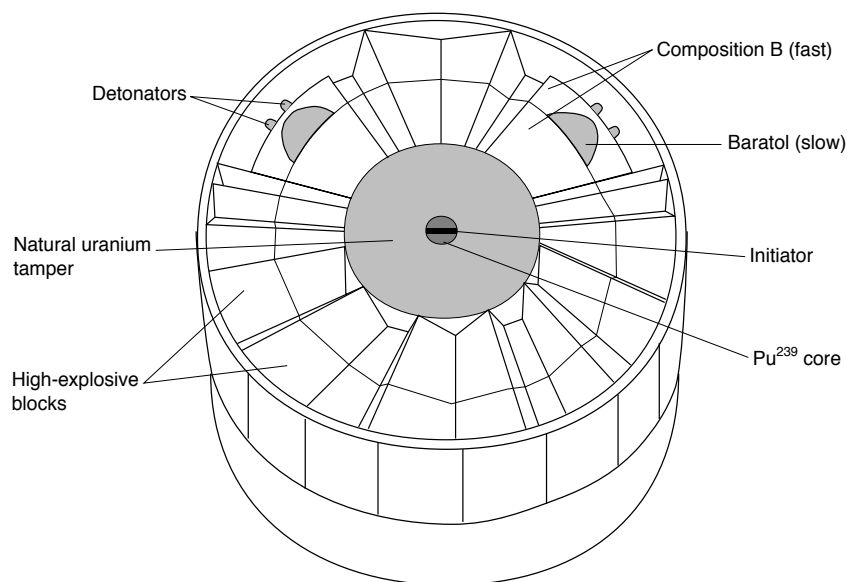
Although scientists made remarkable strides toward creating an atomic bomb in the early stages of World War II, U.S. policymakers felt that improved organization and coordination would speed up the pace of the effort. The most important step toward consolidation came in August 1942 when the U.S. Army established the Manhattan Project to direct the activities of the several sites involved in nuclear research.

Scientist J. Robert Oppenheimer was hired to direct the actual design and construction of an atomic bomb. He personally recruited many of the scientists who would work together in nearly total isolation in Los Alamos, New Mexico. Few refused. For nearly three years, the desert community hosted the largest team of scientists the world has ever seen. Officially, Los Alamos did not exist. Mail was sent to a post office box in Santa Fe and letters and phone calls were censored to insure secrecy. The scientists and engineers at Los Alamos developed a strong bond among themselves. They were united by the conviction that their work might help win the war and lead to a boundless supply of nuclear energy.

What problems did the Manhattan Project scientists uncover?

The scientists faced several problems, including designing a bomb that would use the smallest amount of fissionable material needed for a self-sustaining nuclear chain reaction. They also needed to create separate compartments in the bomb to hold small quantities of fissionable material until the bomb detonated. Otherwise, the heat generated by the early stages of the chain reaction would melt the bomb and lead to incomplete fission and the release of less destructive energy. Two types of bombs were developed. "Little Boy" used U-235. The other type, known as the "Fat Man," used plutonium.

"Fat Man"



What was the result of the testing of the bomb?

As the war in Europe was ending, it became clear through intelligence that the Nazis did not have the material necessary to develop atomic bombs, and in fact had been focusing their research efforts on rockets. Germany's collapse had no impact on the momentum of the Manhattan Project, however. By July 1945, two months after the Nazi surrender, components for three atomic bombs had been manufactured and B-29 planes had been refitted to carry the weapons. The pilots of these planes had trained for ten months in Utah, and while they were aware of the importance of their potential mission, they did not know what kinds of bombs they might be asked to drop.

The existence of the bomb remained a closely guarded secret. Even Harry Truman, vice-president during most of the war, did not know about the bomb until he assumed the presidency after Roosevelt's death on April 12, 1945. At the same time, the Los Alamos team was uncertain if the weapon they had created would actually work. A test was scheduled for mid-July 1945 to detonate one of the two implosion bombs designed at Los Alamos.

The test bomb, a twin of "Fat Man" code-named "Trinity," was mounted on a

hundred-foot tower at the Alamogordo Bombing Test Range in New Mexico. After a brief thunderstorm had safely passed, the device was triggered at 5:29 a.m., July 16.

The Los Alamos scientists watched the detonation from a safe distance and had different reactions. They had formed a betting pool on the results of the test. Some expected the implosion technique to fail. Others estimated yields from three hundred tons of TNT (Oppenheimer's bet) to forty-five thousand

tons of TNT (scientist Edward Teller's guess). A Columbia University physicist, Isidor Rabi, put his money on a yield of eighteen thousand tons of TNT. He won.

Otto Frisch said the explosion rose like "a red-hot elephant standing balanced on its trunk." Then the bang came, "quite loud though I had plugged my ears." Phil Morrison, another scientist who was ten miles from the test site, said the bomb looked like "a desert sun in the midst of night." Isidor Rabi, at the base camp, said later, "I haven't got over it yet. It was awful, ominous, personally threatening. I couldn't tell why." As the group's leader, J. Robert Oppenheimer, watched the explosion, he was reminded of a verse from a Hindu holy book: "I am become death, the shatterer of worlds."

After twelve years of research and more than \$2 billion in expenditures, an idea that a generation of physicists had only imagined as a theoretical possibility was suddenly a reality. President Truman, who at the time of the test was meeting with British Prime Minister Winston Churchill, Soviet leader Josef Stalin, and Chinese President Chiang Kai-shek in Potsdam, Germany, now had the responsibility of deciding if and how the atomic bomb would be used.

July 1945: The Moment of Decision

By the time the atomic bomb was tested in July 1945, the defeat of Japan was the last important item remaining on the Allied war-time agenda. U.S. military officials had begun planning for large-scale landings on the Japanese main islands months earlier. Their initial strategy called for attacking the southernmost island of Kyushu with more than 750,000 troops—a plan that would not be ready to proceed until November 1945. If necessary, more than 1.5 million troops would invade Japan’s largest island, Honshu, in March 1946.

The toll on American forces was expected to be staggering. The battles of Okinawa and Iwo Jima had resulted in some of the highest U.S. casualty rates of the war, as Japanese defenders demonstrated their willingness to fight to the death and even undertake suicide missions. Japanese resistance to an attack on their main islands would be even fiercer. In addition to facing two million Japanese troops, American soldiers would have to fight women and children who had been trained to counter the invaders using sharpened bamboo sticks.

Factors in U.S. Decision-Making

As the atomic bomb program neared completion, President Truman formed a high-level advisory panel, known as the Interim Committee, to offer recommendations on the use of the new weapon. The committee included representatives from government, the military, and the scientific community. In addition, a group of Manhattan Project scientists concerned about the political and moral questions raised by the atomic bomb issued its own conclusions in the Franck Report. Finally, several prominent figures in U.S. foreign policy, including the influential former ambassador to Japan, Joseph Grew, put forward their ideas on ending the war. They believed that the Japanese would surrender unconditionally if they were assured that their emperor would be allowed to keep his position.

In the next section of this unit, you and your classmates will consider three distinct

options for ending the war against Japan. Top government officials, military leaders, and Manhattan Project scientists discussed and evaluated these same options in the closing weeks of the war.

As you review the options that were discussed by the small circle of Americans aware of the atomic bomb program, imagine that you are a U.S. official in July 1945. Keep in mind that the choices confronting U.S. policymakers were framed by the six critical factors below.

1. American military casualties: By July 1945, U.S. forces in World War II had already suffered more than one million casualties, including those killed, missing in action, and wounded. American prisoners of war in Japan were dying of starvation. Some had been tortured and others publicly executed. The Japanese government had announced that it would execute Allied pilots captured over Japan. Both at home and at the battle front, Americans wanted a quick end to the war with a minimal loss of American lives.

2. The policy of unconditional surrender: The United States adopted the demand that the Axis powers surrender unconditionally shortly after our country’s entry into the war. There were three main reasons for the policy. First, the United States and Britain wanted to reassure the Soviet Union that they would not negotiate a separate peace with Nazi Germany. Second, the demand for unconditional surrender reinforced President Roosevelt’s message to the American people that the war was a struggle between good and evil, and that no compromise could be made with the forces of evil. Third, U.S. leaders did not want a repeat of the aftermath of World War I, when German military officials claimed that their army had not been defeated on the battlefield. U.S. leaders believed that this assertion had helped pave the way for a resurgence of German militarism under the Nazis. On May 7, 1945, the German armed forces had been forced to surrender without conditions, after Adolf Hitler committed suicide.

The Allied terms toward Japan were spelled out in the Potsdam Declaration. Japan would be expected to give up the territory it had acquired since 1914. Japan itself would be occupied by Allied forces, its wartime government removed, and its armed forces dismantled. The declaration, however, did not address the postwar status of the Japanese emperor, whom the Japanese viewed as divine. Japanese military officials had vowed to fight

to the death to preserve the emperor's position. The status of the emperor was also a subject of debate within the Truman administration.

3. Emerging problems with the Soviet

Union: The uneasy wartime alliance with the Soviets began unraveling soon after the defeat of Nazi Germany. On the diplomatic front, U.S. and Soviet officials increasingly found themselves locking horns over the political future of Eastern Europe, particularly of Poland, and

The Potsdam Declaration

1. [We] have conferred and agree that Japan shall be given an opportunity to end this war.
2. [Our] forces are poised to strike the final blows upon Japan. This military power is sustained and inspired by the determination of all Allied nations to prosecute the war against Japan until she ceases to resist.
3. ...The full application of our military power, backed by our resolve, will mean the inevitable and complete destruction of the Japanese armed forces and just as inevitably the utter devastation of the Japanese homeland.
4. The time has come for Japan to decide whether...she will follow the path of reason.
5. Following are our terms. We will not deviate from them. There are no alternatives. We shall brook no delay.
6. There must be eliminated for all time the authority and influence of those who have deceived and misled the people of Japan into embarking on world conquest, for we insist that a new order of peace, security and justice will be impossible until irresponsible militarism is driven from the world.
7. ...Points in Japanese territory to be designated by the Allies shall be occupied to secure the achievement of the basic objectives we are here setting forth.
8. [Japan will be stripped of all territory acquired or conquered since 1914.]
9. The Japanese military forces, after being completely disarmed, shall be permitted to return to their homes with the opportunity to lead peaceful and productive lives.
10. We do not intend that the Japanese shall be enslaved as a race or destroyed as a nation, but stern justice shall be meted out to all war criminals, including those who have visited cruelties upon our prisoners. The Japanese government shall remove all obstacles to the revival and strengthening of democratic tendencies among the Japanese people...
11. Japan shall be permitted to maintain such industries as will sustain her economy and permit the exaction of just reparations in kind, but not those industries which would enable her to rearm for war...
12. The occupying forces of the Allies shall be withdrawn from Japan as soon as those objectives have been accomplished and there has been established in accordance with the freely expressed will of the Japanese people a peacefully inclined and responsible government.
13. We call upon the Government of Japan to proclaim now the unconditional surrender of all the Japanese armed forces, and to provide proper and adequate assurances of their good faith in such action. The alternative for Japan is prompt and utter destruction.

the joint Allied administration of occupied Germany. The Soviets also wanted the United States to continue providing the Lend/Lease aid that had helped them win the war against Germany. In addition, U.S. leaders were concerned about the Soviet position in East Asia. Stalin had agreed that three months after the defeat of Germany, the Soviet Union would enter the war against Japan. Although Roosevelt had welcomed the Soviet pledge to attack Japanese forces in China, the Truman administration came to fear that Soviet involvement in the war would lead to demands for territory and play into Stalin's strategy to expand Soviet influence in East Asia.

4. The destructive power of the atomic bomb: Originally, the Manhattan Project had been launched to counter the threat posed by Germany's atomic program. The Japanese had not seriously pursued an atomic program. By the time the atomic bomb was available, however, Japan was the only possible target. U.S. officials were confronted with wrenching moral questions. The atomic bomb was known to be able to wipe out an entire city at once. The radiation emitted from the explosion permeates the landscape; the bomb not only destroys people and buildings on impact, but its effects continue to harm the environment for many years. Scientists at the time were aware of the dangers of radiation, but did not fully understand its potential.

5. The preservation of American values: The United States did not choose to fight World War II. Japan brought the war to American shores, and U.S. leaders insisted that they were fighting to repel aggression, preserve freedom, and champion the dignity and rights of



British Prime Minister Winston Churchill, U.S. President Harry Truman, and Soviet Premier Josef Stalin meet at Potsdam in 1945.

Photo courtesy of Picture History. Used with permission.

the individual. By July 1945, the United States had all but achieved victory against an enemy that, in American eyes, had started an unjust war and had fought in a barbaric and uncivilized manner. U.S. leaders now possessed what they believed to be the means to bring about a quick conclusion to the war. As the moment of decision neared, they were forced to ask themselves if the ends they had pursued for four years justified using the means at their disposal.

6. The possibility of Japanese surrender: Allied efforts had taken a huge toll on Japan, and there were reasons to believe that Japan might be willing to surrender before an invasion by U.S. troops. The Allied sea blockade of the Japanese islands had effectively cut supplies of food and war materials. Japanese oil shipments, critical to the war effort, had been reduced by 85 percent. The Japanese people were facing the prospect of slow starvation. In addition, the Allied blockade prevented Japan from transporting the three million Japanese troops stationed in China back to their homeland.

Additionally, the U.S. air bombardment

of Japanese cities had cut Japan's industrial production to 40 percent of its wartime peak and had killed hundreds of thousands of Japanese civilians. One hundred and eighty square miles of Japanese urban areas had been leveled by General LeMay's campaign. U.S. military planners believed that they would run out of targets within several months.

Finally, U.S. intelligence operations, which had broken Japan's diplomatic code, informed the Truman administration that the

Japanese had secretly approached the Soviet Union as early as May 1945 to suggest that the Soviets help end the war. (The Soviet Union did not declare war against Japan until August 1945.) After the Allies called on Japan to immediately surrender in the Potsdam Declaration of July 1945, Japanese diplomats indicated that they wanted an impartial third party to mediate their surrender using the Potsdam Declaration as the basis for negotiations.

Options in Brief

Option 1: Make This a Time for Peace

Japan is defeated. Japan's top military officials have undoubtedly recognized the hopelessness of their position. The main stumbling block to Japan's acceptance of the Potsdam Declaration is the confusion surrounding the status of the Japanese emperor. The Japanese believe that the emperor is a direct descendent of the gods who created their islands and their people. The United States must now step forward and assure the Japanese that we do not intend to put their emperor on trial as a war criminal. To unleash the power of the atom against a desperate, defeated people would damage the moral leadership that the United States has gained during the war. Once the guns fall silent, we will need all the good will we have earned to build a world of peace and democracy. In the name of American values and honor, we should clear away the last obstacles to Japan's surrender.

Option 2: Take Responsibility for a New Era

The atomic bomb must be used as a force to end the war and strengthen the peace. The United States should demonstrate the power of the atomic bomb to the world by staging an explosion on a deserted island in the Pacific. Americans have paid too high a price to accept anything less than Japan's unconditional surrender. However, how our country ends the war against Japan will have an enormous impact on the postwar world. By demonstrating the atomic bomb, we can begin the process of constructing a postwar world based on peace and respect for human rights. Inevitably, other nations will unlock the secrets of atomic energy. Before long, humanity will possess the power to destroy the entire planet. How the United States uses these first products of the atomic age will serve as an example for the rest of the world. Let us act firmly and responsibly.

Option 3: Push Ahead to Final Victory

For four years, Americans have willingly sacrificed their lives and their resources to overcome the evil forces of fascism and militarism. Now, with final victory within reach, we owe it to our troops to end the war as quickly and decisively as possible. Dropping atomic weapons without warning on Japan's cities, at reasonable intervals, is the surest method of ending the war on our terms and preventing further American casualties. We must not deceive ourselves. The Japanese will admit defeat only in the face of overwhelming military force. Victory over fascism and militarism has not been achieved through hesitation and halfway measures. As the defenders of democracy and freedom, we must remain strong and confident in our convictions.

Option 1: Make This a Time for Peace

Japan is defeated. Its cities have been reduced to rubble, its army smashed, and its dreams of empire shattered. The U.S. Navy has cut off the Japanese main islands from supplies of raw materials. The United States has achieved the goals our country set out to accomplish four years ago. Now the time has come to make peace.

Japan's top military officials have undoubtedly recognized the hopelessness of their position. Japanese diplomats have already approached the Soviet Union in hopes of negotiating their surrender to our country. What has kept the Japanese fighting for so long is the fear that their emperor may be removed. The Japanese believe that the emperor is a direct descendent of the gods who created their islands and their people. The emperor is thus an essential symbol of Japanese heritage and culture, and Japanese troops will fight desperately, even committing suicide, before they break their obligations to him by surrendering. In a U.S. invasion of Japan's main islands, Japanese fanaticism would kill tens of thousands of American soldiers.

The main stumbling block to Japan's acceptance of the Potsdam Declaration is the confusion surrounding the status of the Japanese emperor. The United States must now step forward and precisely explain our country's terms for peace to Japan. We should assure the Japanese that we do not intend to put their emperor on trial as a war criminal. On the contrary, we should allow Emperor Hirohito to remain as a symbolic national figurehead, much like King George VI of Britain. Once the war is over, U.S. troops will have to occupy Japan just as they are currently occupying Germany. In that setting, the emperor will be a useful tool in helping the United States implement the terms of the Potsdam Declaration. The task of sweeping away the influence of aggressive militarism and implanting democratic institutions will be much easier if we can count on the support of Hirohito.

Dropping atomic bombs on Japan would be a mistake. Japan is so close to surrender that even a demonstration of the atomic bomb is not necessary to bring the war to an end. Atomic weapons were developed to counter the threat of Nazi Germany's atomic program, not to slaughter civilians. Understandably, many Americans have little sympathy for Japan. Japanese leaders treacherously attacked our country at Pearl Harbor. They have waged war with cruelty and barbarity. However, we as Americans must send a message to the world. Americans have fought bravely and honorably. We have not sunk to the level of our enemies. We should end the war now in a manner that reflects the value we place on human life and the dignity of the individual. To unleash the power of the atom against a desperate, defeated people would damage the moral leadership that the United States has gained during the war. Once the guns fall silent, we will need all the good will we have earned to build a world of peace and democracy. In the name of American values and honor, we should clear away the last obstacles to Japan's surrender.

Pros and Cons

Supporting Arguments

1. Removing obstacles to Japan's surrender will produce a speedy end to the war and save thousands of American lives.
2. Allowing the Japanese to give up without betraying their emperor will prevent the deaths of hundreds of thousands, perhaps millions, of Japanese civilians and will make the Japanese more willing to cooperate with U.S. occupation forces after the war.
3. Quickly reaching surrender terms with Japan will keep the Soviet Union out of the war in East Asia and prevent the Soviets from demanding a share of the spoils.
4. Permitting the emperor to remain strengthens the hand of the moderates in Japan who wish to end the war and weakens the position of militarist officials.
5. Maintaining the emperor as a national symbolic figurehead will promote stability in postwar Japan and lend legitimacy to U.S. occupation forces.
6. Achieving peace through a flexible, practical policy will bolster U.S. authority and leadership in the postwar world.

Opposing Arguments

1. Allowing the emperor to retain his position will endanger lasting peace. The cult of emperor worship has enabled the Japanese militarists to establish an aggressive, authoritarian regime in Japan and lead their people into war.
2. After suffering nearly one million casualties to defeat fascism and militarism, the American people have a right to expect that their leaders will live up to their pledge to achieve nothing less than the unconditional surrender of Japan.
3. Through their sneak attack on Pearl Harbor and their torture and execution of American prisoners, the Japanese have proven themselves to be evil, ruthless enemies who deserve no mercy.
4. The willingness of our country to negotiate will be viewed by the Japanese as a sign of weakness and will encourage them to continue fighting.
5. Entering into negotiations with Japan will prolong the war and permit Soviet forces to advance into northern China.
6. As the aftermath of World War I showed, unless the roots of aggressive militarism are completely destroyed, new dictators and new wars will spring up again.

From the Historical Record

Letter from President Roosevelt to Secretary of State Cordell Hull, April 5, 1944

“I want at all costs to prevent it from being said that the unconditional surrender principle has been abandoned.... I understand perfectly well that from time to time there will have to be exceptions not to the surrender principle but to the application of it in specific cases. That is a very different thing from changing the principle.”

Memorandum from Secretary of War Henry Stimson to President Truman, July 2, 1945

“We have the following enormously favorable factors on our side—factors much weightier than those we had against Germany: Japan has no allies. Her navy is nearly destroyed and she is vulnerable to a surface and underwater blockade which can deprive her of sufficient food and supplies for her population. She is terribly vulnerable to our concentrated air attack upon her crowded cities, industrial and food resources. She has against her not only the Anglo-American forces but the rising forces of China and the ominous threat of Russia. We have inexhaustible and untouched industrial resources to bring to bear....

“We have great moral superiority through being the victim of her first sneak attack.... I believe Japan is susceptible to reason in such a crisis to a much greater extent than is indicated by our current press and other current comment.... I personally think that if...we do not exclude a constitutional monarchy under her [Japan’s] present dynasty, it would substantially add to the chance of acceptance [of the surrender demands].”

Draft position paper from Assistant Secretary of State Joseph Grew to Secretary of State James Byrnes, July 1945

“The occupying forces of the Allies shall be withdrawn from Japan as soon as [our objectives] have been accomplished and there has been established a peacefully inclined, responsible government of a character rep-

resentative of the Japanese people. This may include a constitutional monarch under the present dynasty if the peace loving nations can be convinced of the genuine determination of such a government to follow policies of peace which will render impossible the future development of aggressive militarism in Japan.”

Report from Combined British-American Intelligence Committee to the Combined Chiefs of Staff, July 8, 1945

“We believe that a considerable portion of the Japanese population now consider absolute military defeat to be probable. The increasing effects of sea blockade and cumulative devastation wrought by strategic bombing, which has already rendered millions homeless and has destroyed from 25 to 50 percent of the built-up area of Japan’s most important cities, should make this realization increasingly general. The entry of the Soviet Union into the war would finally convince the Japanese of the inevitability of complete defeat. Although individual Japanese willingly sacrifice themselves in the service of the nation, we doubt that the nation as a whole is predisposed toward national suicide. Rather, the Japanese as a nation have a strong concept of national survival, regardless of the fate of individuals. They would probably prefer national survival, even through surrender, to virtual extinction.

“The Japanese believe, however, that unconditional surrender would be the equivalent of national extinction.... Foreign occupation of the Japanese homeland, foreign custody of the person of the Emperor, and the loss of prestige entailed by the acceptance of ‘unconditional surrender’ are most revolting to the Japanese. To avoid these conditions, if possible, and, in any event, to insure the survival of the institution of the Emperor, the Japanese might well be willing to withdraw from all the territory they have seized...and even to agree to the independence of Korea and to the practical disarmament of their military forces.”

Option 2: Take Responsibility for a New Era

The Manhattan Project has given the United States a weapon of almost inconceivable power. After spending more than \$2 billion and assembling the greatest team of scientists the world has ever known, the United States has mastered the secrets of the atom. Our leaders have no choice but to accept the responsibility that is in their hands. The atomic bomb must be used as a force to end the war and strengthen the peace.

The United States should demonstrate the power of the atomic bomb to the world by staging an explosion on a deserted island in the Pacific. Japanese leaders must see with their own eyes the awesome might they are up against. They must recognize the futility of their continued resistance and surrender without condition. Only if the Japanese refuse to surrender should the United States drop an atomic bomb on Japan itself. In that case, however, the blame for the deaths of thousands of Japanese civilians will fall on the heads of Japan's leaders, not on the United States.

Americans have paid too high a price to accept anything less than Japan's unconditional surrender. There must be no compromise with the Japanese militarists who brought this terrible war to the United States. Their authority must be crushed so that it never re-emerges, as it did in Germany after World War I. Japanese society can be reformed only if U.S. occupation forces are allowed to conduct their mission without interference.

How our country ends the war against Japan will have an enormous impact on the postwar world. As Americans, we can take pride in the values we have upheld throughout the fighting, despite the barbarism of the Japanese. By demonstrating the atomic bomb, we can begin the process of constructing a postwar world based on peace and respect for human rights. The combination of moral leadership and unrivaled military strength will put us in a unique position. Our trusted allies will be reassured and our enemies will be vanquished. Moreover, the Soviet Union, the only other country capable of challenging our supremacy, will be compelled by the power of the atomic bomb to behave reasonably in charting the future of postwar Europe.

We have been entrusted with an awesome challenge. Japan's leaders need to be jolted into accepting their utter defeat. Clarifying our surrender terms will not open their eyes to reality. However, there is no need to use the atomic bomb against Japanese civilians. An atomic attack would only serve to cast a dark cloud of fear and suspicion over the postwar world. A demonstration of the atomic bomb addresses both the immediate military situation and the fate of coming generations. A demonstration will both shock Japan into surrendering and set a standard for the new era we are entering.

Pros and Cons

Supporting Arguments

1. Demonstrating the awesome power of the atomic bomb will be the most humanitarian way to force the Japanese to accept unconditional surrender.
2. Bringing the war to an end through a demonstration of the atomic bomb will save the lives of thousands of American troops without lowering our international stature.
3. A demonstration of the atomic bomb will strengthen the moral leadership of the United States in the postwar world and set an international standard for the use of atomic weapons.
4. Gaining nothing less than the unconditional surrender of Japan while avoiding the slaughter of innocent civilians is the best tribute to the great sacrifices that the American people have made to defeat fascism and militarism.
5. Exhibiting the power of the atomic bomb to the world will suffice to compel the Soviets to back away from their efforts to expand their influence in Europe.

Opposing Arguments

1. If Japan's militarist officials have not given up their insane war by now, a demonstration of the atomic bomb will not convince them to surrender.
2. Undertaking the lengthy preparations for a demonstration of the atomic bomb will prolong the war, thus opening the door to a Soviet invasion of northern China.
3. Staging a demonstration of the atomic bomb will invite Japanese sabotage, with potentially disastrous consequences.
4. Considering the resources involved in producing each atomic bomb, the United States cannot afford to waste one on a demonstration.
5. The atomic bomb is an unreliable weapon that has been tested only once. A failed demonstration of the bomb will hurt American morale, encourage the Japanese to continue fighting, and lower the stature of the United States internationally.

From the Historical Record

Memorandum from Secretary of War Henry Stimson to President Truman, April 25, 1945

“Within four months we shall in all probability have completed the most terrible weapon ever known in human history, one bomb of which could destroy a whole city.... It is extremely probable that the future may see a time when such a weapon may be constructed in secret and used suddenly...with devastating power by a willful nation or group against an unsuspecting nation.... The world in its present state of moral advancement compared with its technical development would be eventually at the mercy of such a weapon.... Our leadership in the war and in the development of this weapon has placed a certain moral responsibility upon us which we cannot shirk without very serious responsibility for any disaster to civilization which it would further.”

Summary of discussion between Gen. George Marshall, Army Chief of Staff, and Secretary of War Henry Stimson, May 29, 1945

“[General Marshall] said he thought these weapons might first be used against straight military objectives such as a large naval installation, and then if no complete result was derived from the effect of that, he thought we ought to designate a number of large manufacturing areas from which people would be warned to leave.... Every effort should be made to keep our record of warning clear. We must offset by such warning methods the opprobrium which might follow from an ill-considered employment of such force.”

Notes taken at a meeting of the Interim Committee, May 31, 1945

“Dr. Oppenheimer stated that the visual effect of an atomic bombing would be tremendous. It would be accompanied by a brilliant luminescence which would rise to a height of 10,000 to 20,000 feet. The neutron effect of

the explosion would be dangerous to life for a radius of at least two-thirds of a mile.”

Memorandum, also known as the Franck Report, from the Committee of Social and Political Implications—a group of scientists working in Chicago on the Manhattan Project, June 1945

“In the past science has been able to provide also new methods of protection against new weapons of aggression it made possible, but it cannot promise such efficient protection against the destructive use of nuclear power. This protection can only come from the political organization of the world....

“The military advantages and the saving of American lives achieved by the sudden use of atomic bombs against Japan may be outweighed by the ensuing loss of confidence and by a wave of horror and repulsion sweeping over the rest of the world and perhaps even dividing public opinion at home. From this point of view, a demonstration of the new weapon might best be made....

“The best possible atmosphere for the achievement of an international agreement could be achieved if America could say to the world, ‘You see that sort of weapon we had but did not use.’”

Memorandum from Undersecretary of the Navy Ralph Bard, June 27, 1945

“Ever since I have been in touch with this program I have had a feeling that before the bomb is actually used against Japan that Japan should have some preliminary warning for say two or three days in advance of use. The position of the United States as a great humanitarian nation and the fair play attitude of our people generally is responsible in the main for this feeling.... I don’t see that we have anything in particular to lose in following such a program.”

Option 3: Push Ahead to a Final Victory

The United States has always stood for justice and fair play. Throughout our country's history, the United States has not meddled in the affairs of other countries nor entered disputes for selfish reasons. This hateful war was thrust upon us. For four years, Americans have willingly sacrificed their lives and their resources to overcome the evil forces of fascism and militarism.

Now, with final victory within reach, we owe it to our troops to end the war as quickly and decisively as possible. After spending more than \$2 billion to develop an atomic bomb, President Truman has a moral responsibility to use whatever means are at his disposal to save American lives. Any other method to secure peace will likely result in huge numbers of American casualties, as the Japanese army and even its citizens will continue to fight barbarically, with the aim of killing as many Americans as possible before they themselves are killed. Furthermore, dropping atomic weapons without warning on Japan's cities, at reasonable intervals, is the surest method of ending the war on our terms. Even the most hardened Japanese militarist will be forced to accept unconditional surrender—if not after the first atomic bomb, then after the second or third.

We must not deceive ourselves. The Japanese will admit defeat only in the face of overwhelming military force. If we choose not to drop the atomic bombs, we should prepare for a full-scale invasion of Japan that will cost the lives of tens of thousands of our fathers, sons, and brothers. This is not the time for a guilty conscience. The Japanese have fought a merciless war of aggression. They neither expect nor deserve mercy. In light of the sneak attack on Pearl Harbor, the "Bataan Death March," and the torture and execution of Allied prisoners, no Japanese leader can dare accuse us of immoral behavior. Other nations, too, understand that the United States is justified in employing any and all means to destroy Japanese militarism. This is why our closest allies, the British, have already approved the use of atomic weapons against Japan.

It is far too late for negotiations. The Japanese militarists must not be permitted to reach a face-saving compromise that will rescue them from utter defeat. The Japanese emperor must not be allowed to remain as a divine symbol for legitimizing Japan's aggression. Moreover, the Japanese government itself is seriously divided. We might very well reach an agreement with one faction and then face continued resistance from a faction of defiant militarists. Likewise, a demonstration of the atomic bomb serves no purpose at this late stage. An explosion that carves out a crater on a deserted Pacific island is far less convincing than one that flattens thousands of buildings. In addition, we cannot risk the possibility that Japan would shoot down the plane dropping a demonstration bomb. Using the atomic bomb against an enemy city is the only way to deliver our message to the leaders of Japan. Demonstrating our strength and resolve will also have a sobering effect on Soviet dictator Josef Stalin. Victory over fascism and militarism has not been achieved through hesitation and halfway measures. As the defenders of democracy and freedom, we must remain strong and confident in our convictions.

Pros and Cons

Supporting Arguments

1. Only the destruction of several Japanese cities will shock Japan's leaders into immediately accepting unconditional surrender.
2. Using the atomic bomb on Japanese cities is the surest, most effective way to prevent further American casualties.
3. Considering that the war has already resulted in more than fifty million deaths worldwide, the use of the atomic bomb hardly represents an escalation in the level of violence.
4. The destruction of a Japanese city caused by an atomic bomb will impress the Soviets with our country's power and compel them to soften their position on the future of Eastern Europe.
5. The immediate unconditional surrender and complete defeat of Japan's militarists are essential if the United States is to establish a stable, lasting peace and promptly conclude the war without Soviet involvement in East Asia.

Opposing Arguments

1. Slaughtering thousands of innocent Japanese civilians when less destructive roads to peace are open is a violation of the values and principles for which Americans have fought this war.
2. Dropping an atomic bomb on Japanese civilians will damage U.S. moral leadership and undercut our country's ability to construct a lasting peace in the postwar world.
3. Destroying a Japanese city and killing thousands of people will prompt other countries, particularly the Soviet Union, to rush to develop atomic weapons for their own protection.
4. Using an atomic bomb against Japan will deepen anti-American feelings among the Japanese and undermine U.S. plans to reform Japanese society after the war.
5. Conventional military tactics, especially the air bombardment and the naval blockade, have brought the Japanese to their knees, making use of the atomic bomb unnecessary.

From the Historical Record

State of the Union address by President Roosevelt, January 6, 1942

“No compromise can end [this] conflict.... Only total victory can reward the champions of tolerance and decency and freedom and faith.”

Until They Eat Stones, a best-selling book published in 1944 by Associated Press correspondent Russell Brines

“[The Japanese] will continue the war until every man—perhaps every woman and child—lies face downward on the battlefield.... To ignore this suicide complex would be as dangerous as our pre-war oversight of Japanese determination and cunning which made Pearl Harbor possible.... This is a war of extermination. The Japanese militarists have made it that way.”

Report to Congress by President Roosevelt, March 1, 1945

“The unconditional surrender of Japan is as essential as the defeat of Germany...if our plans for world peace are to succeed. For Japanese militarism must be wiped out as thoroughly as German militarism.”

Notes by Arthur Compton from a meeting of the Interim Committee, May 31, 1945

“If a bomb were exploded in Japan with previous notice, the Japanese air power [is] still adequate to give serious interference. An atomic bomb [is] an intricate device, still in the development stage. The operation would be far from routine. If during the final adjustment of the bomb the Japanese defenders should attack, a faulty move might easily result in some kind of failure. Such an end to an advertised demonstration of power would

be much worse than if the attempt had not been made.... If such an open test were made first and failed to bring surrender, the chance would be gone to give the shock of surprise.”

Report of the Scientific Panel to the Interim Committee, June 1, 1945

“We can propose no technical demonstration likely to bring an end to the war; we see no acceptable alternative to direct military use.”

Minutes of the Interim Committee, June 1, 1945

“The present view of the [Interim] Committee was that the bomb should be used against Japan as soon as possible; that it be used on a war plant surrounded by homes; and that it be used without prior warning.”

Letter from Arthur Compton to Secretary of War Henry Stimson, June 15, 1945

“Failure to make a military demonstration [dropping it on a city] of the new bombs may make the war longer and more expensive in human lives.... Without a military demonstration it may be impossible to impress the world with the need for national sacrifices in order to gain lasting security.”

Army Air Force publication, July 1945

“The entire population of Japan is a proper military target.... THERE ARE NO CIVILIANS IN JAPAN. We are making War and making it in the all-out fashion which saves American lives, shortens the agony which War is, and seeks to bring about an enduring peace. We intend to seek out and destroy the enemy wherever he or she is, in the greatest possible numbers, in the shortest possible time.”

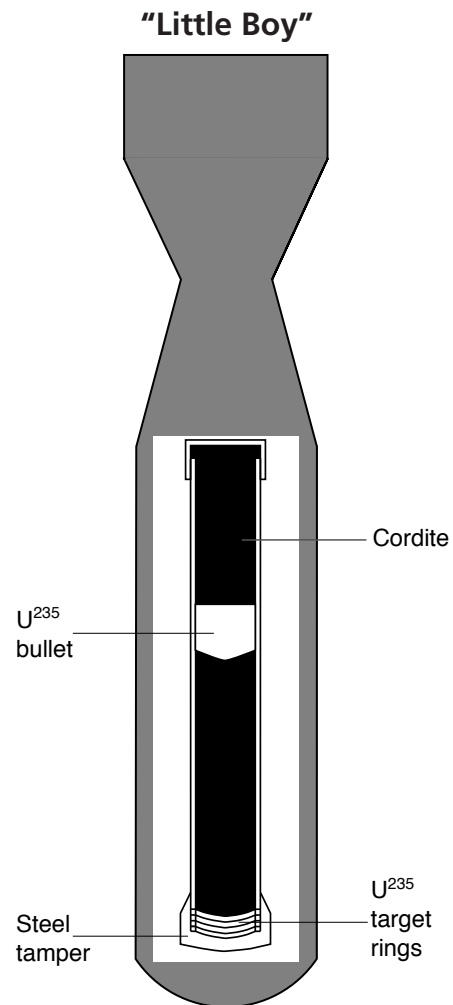
Epilogue: The Decision and the Consequences

On Tuesday, July 24, 1945, President Truman was in Potsdam, Germany, meeting with Soviet leader Josef Stalin, British Prime Minister Winston Churchill, and Chinese President Chiang Kai-shek. The purpose of the conference was to plan for governing postwar Germany and to discuss Soviet participation in ending the war in Asia. At the Yalta Conference in February 1945, President Roosevelt had greeted with enthusiasm Stalin's pledge that Soviet troops would enter the war against Japan within three months of the surrender of Germany. The successful testing of an atomic bomb on July 16, however, had changed the equation. Soviet help in ending the war was not as important in the eyes of U.S. officials. In fact, many believed that the risks of Soviet expansion into northern China outweighed the added pressure the Soviets would exert on Japan.

Late on the evening of July 24, Truman approved a directive prepared by General Leslie Groves authorizing the 509 Composite Group to begin dropping atomic bombs on Japanese cities after August 3. Army Chief of Staff George Marshall and Secretary of War Henry Stimson concurred with the decision. Two days later, at the close of the Potsdam Conference, Truman, Churchill, and Chiang issued a joint ultimatum demanding that the Japanese government surrender unconditionally. That document did not explicitly mention nor did it describe the power of the atomic bomb.

Why did Japanese leaders respond as they did to the ultimatum?

Japanese leaders, meeting in secret on July 27, debated the meaning of the Allied ultimatum and the course they should follow. Some argued for delay until the Soviet Union, which was still neutral, responded to their request for assistance in negotiating an end to the war. The majority, however, contended that national morale would suffer if the ultimatum were not rejected immediately. They held out hope that Japan would be able to inflict so many



casualties on an American invasion force that the United States would be willing to negotiate an end to the war that would not require Japan's unconditional surrender. The next day, Japanese Prime Minister Kantaro Suzuki told reporters, "The Government does not find any important value in it [the ultimatum], and there is no other recourse but to ignore it entirely and resolutely fight for the successful conclusion of the war."

Just before 3 a.m. on August 6, a B-29 superfortress bomber named *Enola Gay* took off from the Pacific island of Tinian carrying the five-ton "Little Boy." The flight's destination was Hiroshima, a medium-sized city on the southern part of the largest Japanese island,

Honshu. Hiroshima had been kept off General LeMay's list of cities to be firebombed and saved as a possible target for an atomic bomb.

What effect did the bomb have on Hiroshima?

Within six hours, Colonel Paul Tibbets had piloted the *Enola Gay* over Hiroshima. The American crew had not encountered a single Japanese plane nor run into fire from anti-aircraft defenses on the ground. As the B-29 approached the center of Hiroshima, flying nearly six miles above the city, "Little Boy" was dropped. The radar on the atomic bomb was set to detonate the device 1,900 feet above ground level to maximize the effects of the blast. A member of the *Enola Gay* crew reported that a spectacular mushroom cloud soared into the sky when the bomb exploded. He described the sight as a burning, red core surrounded by a bubbling mass of purple-grey smoke.

"Little Boy" struck Hiroshima with an explosive force of 12,500 tons of TNT. At the time, the city was home to approximately 280,000 civilians and 43,000 soldiers. Approximately 100,000 of them died immediately or suffered injuries that killed them within a few months of the attack. As in the firebombings of Hamburg, Dresden, and Tokyo, intense heat transformed thousands of people into small, charred lumps of flesh.

"I felt as though I had been struck on the back with something like a big hammer, and thrown into boiling oil.... The vicinity was in pitch darkness; from the depths of the gloom, bright red flames rise crackling, and spread moment by moment. The faces of my friends who just before were working energetically are now burned and blistered, their clothes torn to rags."

—Hiroshima college student

"The appearance of people was... well, they all had skin blackened by burns.... They had no hair because their hair was burned, and at a glance you couldn't tell whether you were looking at them from in front or in back.... Their skin not only on their hands, but on their faces and bodies too hung down."

—Hiroshima grocer

In addition, the radiation burns and internal damage caused by gamma rays produced lethal injuries to people as far as two miles from the center of the blast. The death rate (the number of deaths as a proportion of the total population) in Hiroshima was nearly five times higher than the death rate resulting from the March firebombing of Tokyo. In addition, forty-eight thousand of Hiroshima's seventy-six thousand buildings were totally destroyed by the atomic bomb, while another twenty-two thousand were seriously damaged.

How did U.S. policymakers and soldiers respond to the dropping of the bomb?

News of the bombing was greeted as a success in Washington. The White House issued a press release on August 6 calling the atomic bomb "the greatest achievement of organized science in history." Hours after the detonation, General Groves informed Robert Oppenheimer, head of the Los Alamos team, that the atomic bomb had worked.

"I'm very proud of you and all of your people," Groves told Oppenheimer by telephone. The general noted that the bomb had gone off "with a tremendous bang." Oppenheimer seemed satisfied. "Everyone is feeling reasonably good about it," he said, "and I extend my heartiest congratulations. It's been a long road." That evening, Oppenheimer was greeted with cheers and whistles when he announced the news to the Los Alamos group. Likewise, most Americans were thankful that the end of World War II was clearly in sight.

“When the bombs dropped and news began to circulate that [the invasion of Japan] would not, after all, take place, that we would not be obliged to run up the beaches near Tokyo assault-firing while being mortared and shelled...we cried with relief and joy. We were going to live. We were going to grow up to adulthood after all.”

—21-year-old U.S. soldier

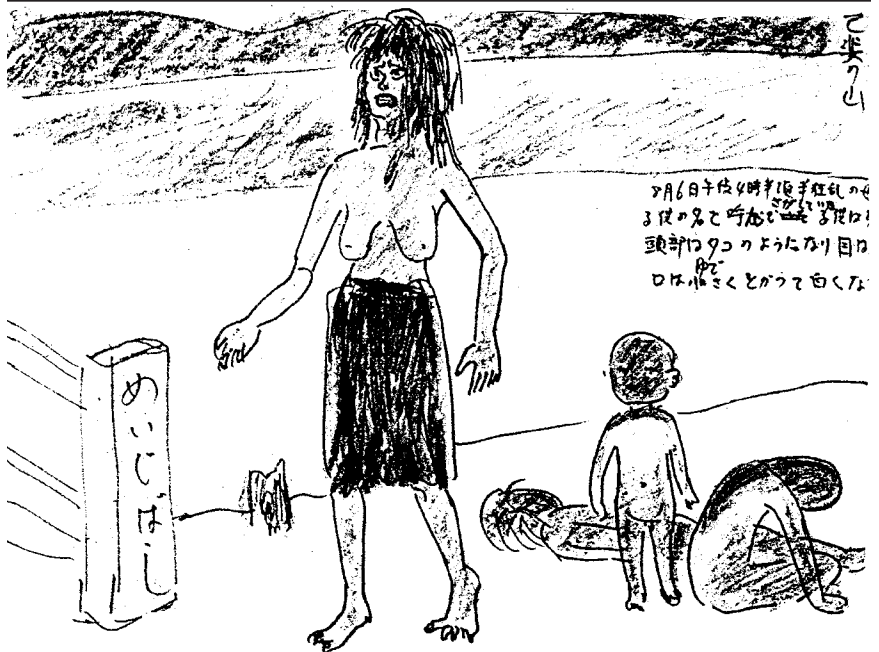
“Thank God the war is over and I don’t have to get shot at any more. I can go home.”

—Enola Gay crew member

How did the war finally end?

After the attack on Hiroshima, the Japanese government did not immediately respond to the U.S. call for unconditional surrender. On August 8, Josef Stalin announced that the Soviet Union would enter the war against Japan the following day, fulfilling the pledge he made in February 1945.

The Hiroshima explosion left the United States with one atomic bomb, “Fat Man,” which was fueled by plutonium. Where and when it would be dropped was entirely a military decision. Truman’s directive of July 24 had authorized the use of atomic bombs against Japanese cities. The president was not involved in se-



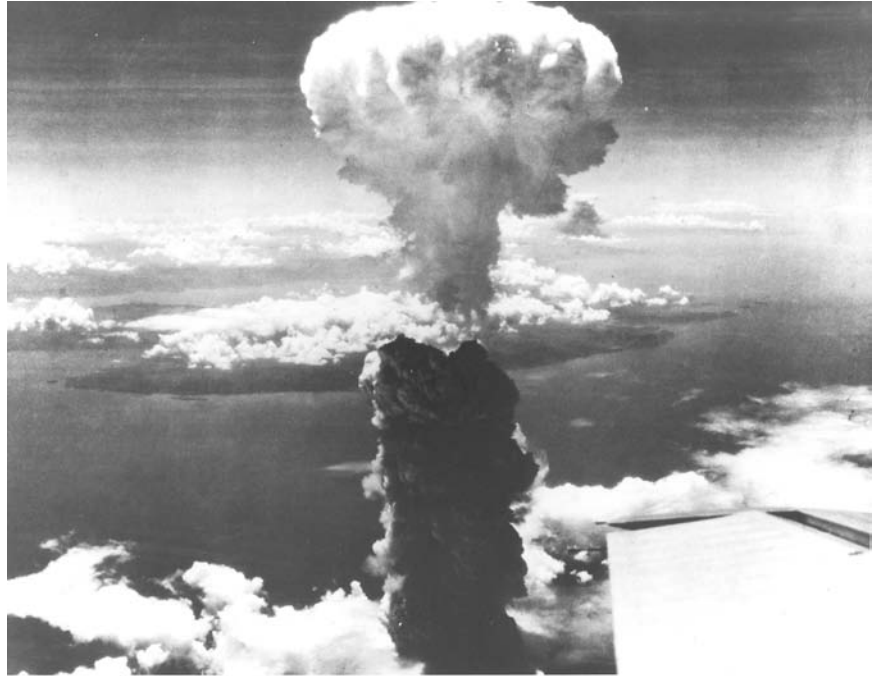
The sketches above, drawn by survivors of the atomic bombing of Hiroshima, illustrate the results of the attack.

lecting the targets or the dates.

For the second atomic bomb attack, U.S. military officials chose Nagasaki, a seaport on the southern island of Kyushu. Unlike the inhabitants of Hiroshima, the people of Nagasaki were warned of the possibility of an

atomic attack in leaflets dropped by U.S. aircraft. The warnings were largely ignored because the Japanese government had not released news about the devastation of Hiroshima. On August 9, “Fat Man” exploded over Nagasaki with a force of twenty-two thousand tons of TNT. Roughly seventy thousand people were killed.

On August 10, the Japanese offered to surrender on the condition that the position of the Japanese emperor not be compromised. U.S. leaders responded that Japan would have to accept the terms of the Potsdam Declaration. Meanwhile, the Los Alamos team informed the president that a third bomb, fueled by plutonium, would be ready for delivery shortly after August 17. The scientists assumed that the plutonium being produced at Hanford, Washington, would provide a reliable fuel supply for additional bombs.



A photograph of the bomb dropped on Nagasaki.

Photo from Army Air Corps, courtesy Harry S. Truman Library. Used with permission.

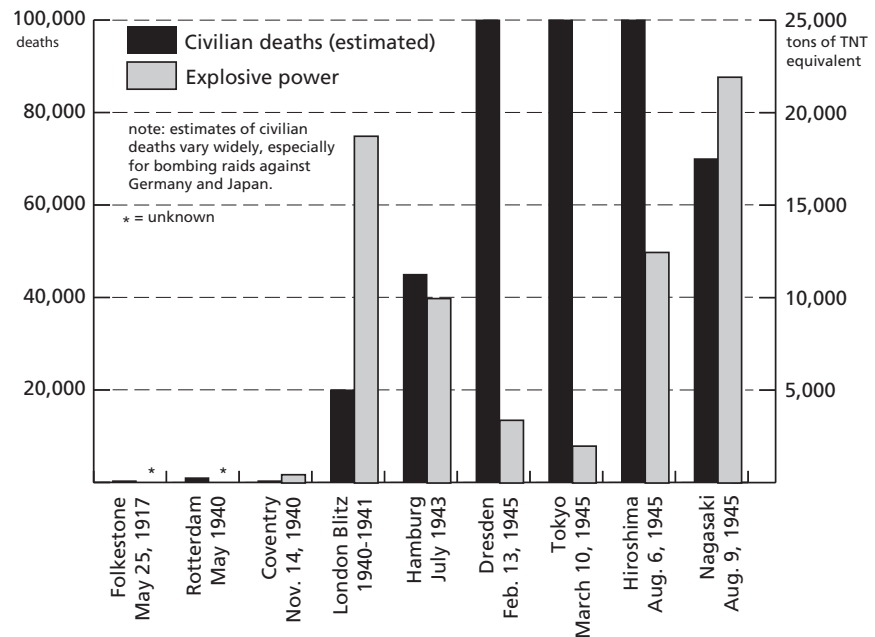
President Truman ordered continued bombing of Japanese cities using conventional explosives. On the night of August 14, 828 B-29s bombed Tokyo in one of the largest air raids of the war. That same day, Japan’s leaders indicated that they were willing to accept the terms of the Potsdam Declaration and surrender unconditionally. World War II was over.

Making Connections: Issues Raised by the Atomic Bomb

Sixty years have passed since the concluding days of World War II. The radiation that killed tens of thousands of people in Hiroshima and Nagasaki has largely disappeared. The number of living survivors shrinks with each passing year. And yet, many of the issues surrounding the U.S. decision to drop the atomic bomb on Japan remain as controversial as ever.

This section of the unit will engage you in the political and ethical questions that have emerged from the ashes of Hiroshima and Nagasaki. As you will see, the most hotly debated issues are those that touch on values that influence the direction of current U.S. foreign policy. Each issue concludes with discussion questions and ideas for additional research.

Comparison of Deaths and Explosive Power in Bombings



Issue #1: The Moral Responsibility for Using the Bomb

The morality of the decision to drop the atomic bomb on Japan has been debated vigorously since August 1945. In his radio address to the nation on August 12, three days after the Nagasaki bombing and two days before the surrender of Japan, President Truman recognized the moral issues involved and strongly defended his decision:

“I realize the tragic significance of the atomic bomb. Its production and its use were not lightly undertaken by this government. But we knew that

our enemies were on the search for it. We know now how close they were to finding it. And we know the disaster which would have come to this nation and to all peaceful nations, to all civilizations, if they had found it first.... That is why we felt compelled to undertake the long and uncertain and costly labor of discovery and production. We won the race of discovery against the Germans. Having found the bomb we have used it.... We have used it against those who attacked us without warning at

Pearl Harbor, against those who have starved and beaten and executed American prisoners of war, against those who have abandoned the pretense of obeying international laws of warfare. We have used it in order to shorten the agony of war, in order to save the lives of thousands and thousands of young Americans. We shall continue to use it until we completely destroy Japan's power to make war. Only a Japanese surrender will stop us."

—President Harry S Truman

There were also Americans who objected to their country's wartime policy. *New York Times* correspondent Hanson Baldwin saw the use of the atomic bomb as the final piece of an immoral strategy that began with the first bombing raids against German and Japanese cities. Baldwin expressed his opinions in September 1945:

“The United States has sacrificed its moral leadership of the world. Actually the first use of the atomic bomb did not mark the end—it is to be hoped the temporary end—of that leadership. The mass bombing of European cities, miscalled ‘precision’ bombing but actually area bombing

in its effects, was just as terrible for the civilian men, women and children killed and wounded as for those blasted by the atomic bomb.... The fire attacks upon Japanese cities burned people to death fully as irrevocably as did the atomic bomb. The atomic bomb had a quantitative advantage in death and annihilation; more people were killed, more burned, more homes destroyed, but actually the moral principle involved in its use was no different from that established a thousand times before in the war.... It may be argued with perfect validity that the Germans and the Japanese started the evil practices, and that there is no crime worse than war itself. It may also be argued that it is futile to try to make war moral; in fact that there is a certain humanity about trying to make it so horrible that it will be ended quickly, thus saving many lives at the expense of a relatively few, as in the case of Japan or in the ultimate case by making war so annihilating and terrible that it will be made impossible.... Regardless of the validity of these arguments, in the mind of many foreigners and of a considerable number of Americans, the atomic bomb was not only a

Survey Question: How Should the Atomic Bombs Have Been Used to End the War Against Japan?

Statement:	Percent in Agreement:
We should not have used any atomic bombs at all.	4.5%
We should have dropped the first one on some unpopulated region, to show the Japanese its power, and dropped the second one on a city only if they hadn't surrendered.	13.8%
We should have used the two bombs on cities just as we did.	53.5%
We should have quickly used many more of them before Japan had a chance to surrender.	22.7%
Don't know.	5.5%

Surveys of public opinion shortly after the end of World War II indicated that a strong majority of Americans agreed with Truman. The survey results above were published in *Fortune* magazine in December 1945.

***tremendous scientific achievement;
it marked the end of the moral
leadership of America.”***

—Hanson Baldwin

Questions for discussion:

1. Discuss how President Truman’s address draws on the traditional concepts of “just war” and “just means,” and the twentieth century experience with total war. On whom does Truman place the moral responsibility for the use and consequences of the atomic bombs? Compare his position to the argument offered by General William Sherman to justify his army’s march through Georgia during the Civil War.

2. How would Hanson Baldwin have

judged Truman’s argument for using the atomic bomb? When, in Baldwin’s opinion, did the United States lose its moral leadership? Do you agree? What factors account for the results of the public opinion survey?

Suggestion for further research:

Many of the U.S. officials who had a voice in the decision to use the atomic bomb wrote first-hand accounts of their involvement after the war. Compare how President Truman, Secretary of War Henry Stimson, Secretary of State James Byrnes, and General Leslie Groves viewed the moral issues connected to the atomic bomb.

Issue #2: “Little Boy,” “Fat Man,” and Japan’s Surrender

In 1946, the United States Strategic Bombing Survey concluded that “Certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered, even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been contemplated.”

For sixty years, historians have argued vigorously about America’s use of the atomic bomb against Japan. Most have agreed that Japan eventually would have surrendered as a result of the U.S. blockade, aerial bombardment, and ultimate invasion of the Japanese main islands. The main areas of controversy have revolved around the Truman administration’s emphasis on ending the war as quickly as possible and whether the atomic bomb was necessary to force Japan to accept the terms of the Potsdam Declaration.

Many have focused in particular on Japan’s desperate appeal to the Soviet Union to act as a mediator in the last months of the war. The historical record suggests that moderate officials within the Japanese government took the first steps to end the war in the Pacific before Truman’s decision to begin the atomic bombing of Japan. On August 2, 1945, the Japanese

foreign minister cabled the Japanese ambassador in Moscow to summarize the government’s view:

“At present, in accordance with the Imperial will, there is unanimous determination to ask the good offices of the Russians in ending the war.... Under the circumstances there is a disposition to make the Potsdam Declaration the basis of our study concerning terms.... If we should let one day slip by, the present situation may result in a thousand years of regret.”

—Japanese Foreign Minister, August 1945

The ambassador replied two days later:

“The [Potsdam] Declaration already provides a basis for ending the war. Therefore, if Russia assumes the role of mediator...the action will have to be carried out on this basis. I feel that [your] statement is an extremely auspicious one.”

—Japanese Ambassador to the U.S.S.R.

The Allied demand in the Potsdam Declaration for Japan's unconditional surrender created confusion among Japanese policymakers in the final days of the war. The Japanese were uncertain what the Allied leaders meant by the declaration. Would Japan's emperor be deposed and tried as a war criminal? Would the Japanese as a nation be permanently occupied, enslaved, and stripped of identity and honor?

U.S. military intelligence intercepted and decoded the above exchange between the Japanese foreign minister and Japan's ambassador in Moscow. U.S. leaders, however, did not further clarify the meaning of unconditional surrender. Some historians maintain that the Japanese would have surrendered before the attack on Hiroshima if the United States had indicated that their emperor could remain as a constitutional monarch, like King George VI of Britain. (In fact, the United States did allow Emperor Hirohito to reign as a constitutional monarch after the war.) Others maintain that the supporters of surrender represented a minority within the Japanese government before the atomic bomb attacks.

Questions about Japanese peace efforts in 1945 also figure prominently in another controversial topic, the U.S. atomic bomb attack against Nagasaki on August 9, three days after the bombing of Hiroshima. The atomic bombing of Nagasaki grew out of President Truman's decision of July 24, 1945, to authorize the military to begin dropping atomic bombs on Japan to force the Japanese to surrender unconditionally. Truman did not specify how many bombs should have been used and where they should have been dropped.

When the Japanese government did not respond to the U.S. demand for unconditional surrender after the destruction of Hiroshima, the 509 Composite Group was ordered to drop "Fat Man" over Nagasaki. The next day, Truman ordered a halt to the atomic bomb-

ing of Japan. On August 14, the Japanese surrendered. Another atomic bomb had been scheduled to be available after August 17.

Questions for discussion:

1. The three-day gap between the Hiroshima and Nagasaki attacks has long been a target of critics of the Truman administration's policies. President Truman never expressed regret for his decision to use atomic bombs against Japan. However, he ordered a halt to the campaign the day after the attack on Nagasaki. Should he have cancelled the atomic bombing of Nagasaki to give the Japanese more time to respond to the surrender demands? If the Japanese had not surrendered on August 14, should the United States have dropped a third atomic bomb?

2. The "what if" questions of history are both fascinating and frustrating. The final days of World War II produced many of them. What if the United States had offered to open peace negotiations with Japan? What if the United States had demonstrated the power of the atomic bomb on a deserted Pacific island? How might the course of history have been changed? Can you suggest other challenging "what if" questions?

Suggestions for further research:

1. Research the discussions among President Truman and his closest advisors in the final days of the war concerning the terms of surrender presented to the Japanese and the status of the Japanese emperor. Assess the wisdom of the advice Truman received and the reasons for the president's ultimate decision.

2. Research the decisions taken by the Japanese government during the first two weeks of August 1945. Determine the reasons for Japan's refusal to surrender after the dropping of the first atomic bomb.

Issue #3: Scientists and Moral Responsibility

With the atomic bomb, the scientists knew sin.” So said Robert Oppenheimer many years after his initial enthusiasm about the success of the Manhattan Project had given way to serious misgivings about nuclear weapons. Albert Einstein, who had not worked on the Manhattan Project, shared Oppenheimer’s viewpoint. Shortly before his death, Einstein said, “I made one great mistake in my life when I signed the letter to President Roosevelt recommending that an atomic bomb be made.”

Science and war have long been closely linked, but the development of atomic weapons opened a new chapter in the debate about the moral responsibility of scientists. Some of the Los Alamos scientists refused to continue to participate in the U.S. nuclear weapons program after World War II. Many others continued to develop far more powerful weapons than the bombs dropped on Japan. In two speeches delivered within six months of the attacks on Hiroshima and Nagasaki, Oppenheimer defended the efforts of the Los Alamos team and argued that the atomic bomb might lead to world peace:

“When you come right down to it, the reason that we did this job is because it was an organic necessity. If you are a scientist you cannot stop such a thing. If you are a scientist you believe that it is good to find out how the world works...that it is good to turn over to mankind at large the greatest possible power to control the world.... It did not take atomic weapons to make war terrible....It did not take atomic weapons to make man want peace that would last. But the atomic bomb was the turn of the screw. It has made the prospect of future war unendurable.”

—Robert Oppenheimer

Edward Teller, speaking in 1954 after he had supervised the successful development of the hydrogen bomb, argued that scientists

were not morally responsible for leading the world into the atomic age, and that they had no special moral or political insight:

“The important thing in any science is to do the things that can be done. Scientists naturally have a right and duty to have opinions. But their science gives them no special insight into public affairs. There is a time for scientists and movie stars and people who have flown the Atlantic to restrain their opinions lest they be taken more seriously than they should be.”

—Edward Teller

Another Manhattan Project physicist, I.I. Rabi, however, would not let the scientists off the hook so easily:

“The lesson we should learn from all this, and the frightening thing which we did learn in the course of the war, was how easy it is to kill people when you turn your mind to it. When you turn the resources of modern science to the problem of killing people, you realize how vulnerable they really are.”

—I.I. Rabi

Likewise, two of the leading figures in atomic physics deeply regretted the bombing of Hiroshima and Nagasaki.

Leo Szilard shared his opinion in a letter to a friend:

“Using atomic bombs against Japan is one of the greatest blunders in history. Both from a practical point of view on a ten-year scale and from the point of view of our moral position. I went out of my way and very much so in order to prevent it but as today’s papers show without

success. It is very difficult to see what wise course of action is possible from here on.

—Leo Szilard

Otto Hahn expressed shock at the results of the bombings:

“At first I refused to believe that this could be true.... I was shocked and depressed beyond measure. The thought of the unspeakable misery of countless innocent women and children was something that I could scarcely bear.”

—Otto Hahn

Question for discussion:

According to one viewpoint, the development and use of the atomic bomb was inevitable, and therefore atomic scientists were not morally responsible for the results. The argument goes like this: the discovery of nuclear fission by scientists working without government sponsorship was the result of the

natural process of science; once the military potential of fission became clear, leading countries could not take the chance that a potential enemy might develop the weapon first; with the development of the atomic bomb, its use in time of war was inevitable. Therefore, if the United States had not dropped the first atomic bomb on Hiroshima in 1945, the technology would have soon been used elsewhere. What do you think about the validity of this line of reasoning? Does this argument relieve the scientists and political leaders of moral responsibility? Explain your answer.

Suggestion for further research:

During the 1950s and 1960s, there was a vigorous public debate among scientists concerning the continued development and use of nuclear weapons. Much of this debate took place in the pages of the *Bulletin of Atomic Scientists*, a magazine started by atomic scientists after the war. Research past issues of the *Bulletin* and summarize the positions taken during these debates. Note how the terms of the debate changed over time.

Issue #4: The Soviet Union, not Japan, Was the Real Target of the Atomic Bomb

Some historians maintain that U.S. relations with the Soviet Union were the decisive factor in President Truman's decision to drop atomic bombs against Japan. They point to the events following the end of the war in Europe to support their argument.

In February 1945, at the Yalta Conference of Allied leaders, President Roosevelt had eagerly sought Soviet participation in the war against Japan. Roosevelt hoped that a Soviet attack against Japanese forces in China would bring the war to a swift conclusion and reduce the number of American casualties. In exchange for Soviet support, the president told Josef Stalin that the Soviet Union would be granted territorial concessions in East Asia.

The successful testing of the atomic bomb in July 1945 changed American attitudes. Many top U.S. leaders believed that the war against Japan could be ended before the Soviets were scheduled to enter the conflict in mid-August. Their view was also influenced by the deepening tensions between the United States and the Soviet Union in Europe.

The U.S.-Soviet wartime alliance had never been particularly warm. With the end of the fighting, the two countries were increasingly at odds over the future of Eastern Europe and Germany and the continuation of U.S. Lend/Lease aid to help the Soviets rebuild their country.

In general, Truman adopted a tougher line

against the Soviets than Roosevelt had. The president told his advisors, “I intend to be firm in my dealings with the Soviet government,” and “If the Russians did not wish to join us [in forming the United Nations] they could go to hell.” The plain-talking former senator from Missouri even “chewed out” the Soviet foreign minister at a White House meeting.

An indication of the thinking inside the Truman administration is found in a diary entry made by Secretary of War Henry Stimson in mid-May 1945. In his diary, Stimson discusses postponing the president’s meeting with Stalin at Potsdam until after the first test of the atomic bomb.

“I tried to point out the difficulties which existed [with the Soviet Union] and I thought it was premature to ask those questions [regarding our relations with the Soviet Union]; at least we were not yet in a position to answer them. The trouble is that the President has now promised apparently to meet Stalin and Churchill on the first of July and at that time these questions will become burning and it may be necessary to have it out with Russia on her relations to Manchuria and Port Arthur and various other parts of North China, and also the relations of China to us. Over such a tangled weave of problems [the atomic] secret would be dominant and yet we will not know until after that time probably, until after that meeting, whether this is a weapon in our hands or not. We think it will be, shortly afterwards, but it seems a terrible thing to gamble with such big stakes in diplomacy without having your master card in your hand.”

—Secretary of War Henry Stimson

In fact, the Potsdam Conference was delayed until mid-July. When the U.S. delegation reached Germany, its members were anxiously awaiting the results of the Trinity test. On

the eve of his first meeting with the Soviets in Potsdam, President Truman declared to an associate, “If it explodes, as I think it will, I’ll certainly have a hammer on those boys [the Soviets]!” On July 24, eight days after the Trinity explosion and just before the close of the conference, Truman casually informed Stalin that the United States had “a new weapon of unusual destructive force.” No further details were offered. Stalin replied that he was glad to hear it and hoped the United States would make “good use of it against the Japanese.” Stalin was not surprised. Soviet intelligence operations had been closely following the Manhattan Project.

Questions for discussion:

1. Some historians have suggested that Truman and his advisors dropped the atomic bombs primarily to influence the Soviet Union. Assuming their view is correct, what is your attitude toward the decision? Did the goal of restraining the Soviet Union justify the destruction of Hiroshima and Nagasaki? Can you find examples from U.S. history since World War II in which the United States has taken military action against a country to influence the policies of another country?

2. U.S. possession of the atomic bomb cast a shadow over U.S.-Soviet relations after World War II. Did the United States act prudently in withholding details of the atomic bomb from Stalin and in refusing to share its research with the Soviets? Did these policies contribute to the Cold War? Would the direction of U.S.-Soviet relations have taken a different course if the United States had not dropped atomic bombs on Hiroshima and Nagasaki? What information would you need to answer these questions? In what sources would you find such information?

Suggestion for further research:

The main source of information on the U.S. atomic bomb program for the Soviets was Manhattan Project scientist Klaus Fuchs, a naturalized British citizen. After the Soviet Union exploded its first atomic bomb in 1949, Julius and Ethel Rosenberg, two American citizens,

were convicted for passing atomic secrets to Soviet spies. The couple was executed in 1953. The Rosenberg case continues to spark

controversy. Research the role of Fuchs and the Rosenbergs in the atomic bomb program of the Soviet Union.

Issue #5: Foreign Policy, Deterrence, and Morality in the Nuclear Age

At the end of World War II, General Leslie Groves predicted that the Soviets would need twenty years to develop an atomic bomb. (Groves's thinking was based on the mistaken assumption that the Soviet Union lacked significant uranium deposits.) Most of the scientists close to the Manhattan Project expected that the Soviet Union would have a bomb within five to twelve years.

In fact, the Soviets exploded their first atomic bomb in August 1949. Four years later, they detonated their first hydrogen bomb—a far more powerful weapon based on nuclear fusion. (The United States tested its first hydrogen bomb in 1952.)

The Soviet program to develop nuclear weapons was gaining steam at a time when U.S.-Soviet relations were rapidly deteriorating. By the late 1940s, the wartime alliance between Washington and Moscow had been replaced by the intense hostility known as the Cold War.

The moral dimension of U.S. nuclear weapons policy held a prominent place in international relations during the Cold War. For four decades, U.S. leaders were forced to confront the possibility that they might be called on to launch a nuclear attack against the Soviet Union.

From the outset of the Cold War, nuclear weapons were a critical element in the balance of power between the superpowers. The Soviets had a clear advantage in conventional forces (such as tanks, artillery, and ground troops) in Europe. U.S. officials worried that the Soviets would overrun Western Europe unless the United States was willing to defend its allies. U.S. strategy was based largely on our country's superiority in nuclear weapons. In the 1950s, U.S. bombers stationed in North America and Western Europe had the capability to drop nuclear bombs on the Soviet Union,

while the Soviets' ability to deliver nuclear weapons against the United States was much more limited.

For U.S. nuclear weapons strategy to be effective, however, the threat had to be credible. The Soviets had to believe that the United States had the capacity and the will to follow through on its commitment. The stakes involved in U.S. nuclear weapons policy rose still higher in the 1960s as the Soviets rapidly narrowed the gap in nuclear power. The United States maintained its pledge to use nuclear weapons against Soviet forces invading Western Europe, but U.S. leaders now faced the risk of provoking an all-out nuclear counterattack.

By the end of the 1960s, a new balance of nuclear power had emerged. According to the logic of the nuclear age, neither superpower would dare start a nuclear war if the outcome would be the near-complete destruction of civilization. Nuclear war became almost unthinkable. Nonetheless, U.S. and Soviet leaders poured billions of dollars into nuclear research to make sure that they did not fall behind in the arms race. Both Washington and Moscow feared that weakness would tempt the other side to launch a decisive first strike. By the time the Soviet Union collapsed in 1991, the two superpowers had produced more than seventy thousand nuclear warheads. The largest bombs are over one thousand times more powerful than "Little Boy."

Most of the resources of the nuclear arms race were spent on improving delivery systems, especially as technological breakthroughs reduced the costs of refining fissionable materials. Both the United States and the Soviet Union developed missiles capable of accurately delivering a warhead against a target six thousand miles away in less than thirty minutes, bomber aircraft that could

strike from one continent to another, and nuclear-equipped submarines with enough explosive power to kill tens of millions of people.

In addition, billions of dollars were spent on defense systems to counter incoming nuclear missiles and to protect people from nuclear attack. Underground bomb shelters were built and stocked with food, water, and other necessities. Students were drilled to shield themselves from the effects of a nuclear blast. Fortunately, the Cold War preparations were never put to use.

Questions for discussion:

1. U.S. and Soviet armies never fought one another during the Cold War. Does this mean that the nuclear arms race helped to keep the peace between the superpowers? What were the alternatives for U.S. policymakers? Did the ends achieved justify the means in the case of the Cold War? What information do you need to answer these questions intelligently?

2. Deterrence depends on convincing your opponent of your intention to follow through on your threat. Does the intention to use nuclear weapons have the same moral responsibility as their actual use?

Suggestions for further research:

1. Research the costs of the nuclear arms race for both the United States and the Soviet Union. Compare the explosive power (TNT tonnage) of the largest warheads contained in a nuclear missile submarine or an intercontinental ballistic missile with the power of the atomic bomb dropped on Hiroshima.

2. Research the use of nuclear threats by the United States in ending the Korean War and in forcing China to back off from its plans in the 1950s to invade two small islands (Que-moy and Matsu) claimed by Taiwan. Compare these incidents with the Soviet nuclear threats against the British and French during the Suez crisis of 1956. Research how these incidents influenced the course of U.S. policy on the use of nuclear weapons.

3. Investigate the nuclear security problems that have resulted from the break-up of the Soviet Union. Examine the programs undertaken by the United States to address the threats posed by the nuclear arsenal of the former Soviet Union.

4. Investigate the status of current nuclear arms agreements between the United States and Russia. What controversies surround the United States decision to withdraw from the Anti-Ballistic Missile (ABM) Treaty? What international legal controversies surround the possession and use of nuclear weapons?

Issue #6: Radiation, Fallout, and Nuclear Testing

The potential danger of radiation was recognized but not fully understood in the 1930s. Marie Curie, a French scientist who won the Nobel Prize for Chemistry in 1911 for her discovery of radium, died in 1934 from the effects of prolonged exposure to radiation. During this period, scientists learned more about the capacity of gamma radiation to prevent cells from replicating normally, or even to kill them. The first steps were also taken by doctors to use radiation to destroy cancer cells.

The bombing of Hiroshima and Nagasaki

represented the first opportunity to study the effects of high dosages of radiation on large numbers of people. The Japanese and American doctors stationed in Hiroshima and Nagasaki after the war saw two types of short-term effects. Most striking were the severe skin burns caused by the absorption of high levels of radiation at the moment of the explosion. The radiation raised the surface temperature of the skin, resulting in instant burning. Doctors treated the radiation victims using the same methods applicable to normal burns.

Not immediately obvious were the injuries caused by the radiation to the internal organs of the body. “A-bomb disease,” as the condition became known, was marked by the loss of appetite and weight, nausea, and hair loss. Many victims wasted away and died. (Most of the same symptoms, typically in more mild form, are experienced by patients receiving radiation treatment for cancer.)

In addition to short-term effects, the radiation produced serious long-term harm to the inhabitants of Hiroshima and Nagasaki. Human reproductive organs and fetuses in the womb were especially susceptible to radiation damage. Hiroshima and Nagasaki witnessed a sharp increase in cases of sterility, cancer, and birth defects following the atomic bomb attacks.

The long-term impact of radiation in Japan raised concern among American scientists and doctors about our country’s testing of nuclear weapons. In the years immediately following World War II, small units of American troops were often positioned a few miles from nuclear blast sights to determine how an army would function in a nuclear war. Although the soldiers were too far away from the explosion to suffer short-term radiation harm, data collected over time indicated an increase in long-term radiation damage. The United States discontinued the practice in the 1950s.

Potentially more serious was the danger posed by the radioactive materials created in a nuclear blast. When a nuclear bomb explodes, both the bomb’s casing and the earth’s surface at the point of detonation are exposed to intense radiation and themselves become radioactive. The radioactive materials can then be carried for hundreds of miles with the cloud of debris generated by the explosion. What is known as radioactive fallout eventually settles to earth and may contaminate land, water, and the food we eat.

Research about radioactive fallout provided cause for additional concern during the late 1950s and early 1960s. In particular, the increased presence of the radioactive isotope

strontium-90 (Sr-90) in the atmosphere led to calls for a halt to atmospheric testing. Strontium is chemically similar to calcium, and scientists feared that radioactive Sr-90 from nuclear testing would be ingested by dairy cows. In turn, the Sr-90 could be passed on to children through milk and be stored permanently in their bones. Rising public anxiety helped prod U.S. and Soviet leaders to conclude a treaty in 1963 banning the testing of nuclear weapons in the atmosphere. The subject of nuclear testing continues to spark controversy today in international relations.

Question for discussion:

Long-term battle injuries, sometimes leading to death years after the fighting has stopped, are as old as war itself. What are the reasons why the long-term effects of nuclear weapons have raised an unprecedented level of concern? Does the impact of radiation make nuclear weapons less moral than conventional weapons? Explain your reasoning. Would a nuclear bomb producing little radioactive fallout be more moral, or less immoral, than a nuclear bomb with high fallout?

Suggestions for further research:

1. Ask a radiologist how radiation is measured and research the sources of radiation to which we are commonly exposed, such as X-rays, radon, cosmic radiation, household appliances, and nuclear power plants. What levels of radiation are considered safe today? Estimate the total amount of radiation you are exposed to and compare the figure to the dosages received by the inhabitants of Hiroshima in 1945, by the American troops exposed to atomic testing, and by the Soviet citizens living near the nuclear power plant that exploded in 1986 at Chernobyl.

2. Using old newspapers, research how the threat of radioactive fallout was perceived in the 1950s. Check the half lives of radioactive elements to determine if the effects of the fallout produced in the atmospheric tests of nuclear weapons are still present.

Issue #7: The Crusade Against Evil and the Ends-Means Dilemma

U.S. leaders and the American people saw the global struggle that began for the United States with the Japanese attack on Pearl Harbor as much more than Karl von Clausewitz's view of war as "a continuation of politics by other means." Rather, Americans considered it a contest between good and evil, pitting God-fearing, democratic people against godless, fascist regimes determined to extinguish the central values of Western civilization. President Roosevelt set the tone of the war in his State of the Union address on January 6, 1942, less than one month after the attack on Pearl Harbor.



Cartoons reprinted from *War Without Mercy*, by John Dower.

As the two sketches above illustrate, the Japanese were generally portrayed as evil, if not subhuman, in the American media during World War II.

“Our enemies are guided by brutal cynicism, by unholy contempt for the human race. We are inspired by a faith which goes back through all the years to the first chapter of the Book of Genesis: ‘God created man in His image.’ We on our side are striving to be true to that divine heritage.... Those on the other side are striving to destroy this deep belief and to create a world in their own image—a world of tyranny and cruelty and serfdom.... That is the conflict that day and night now pervades our lives. No compromise can end that conflict. There never has been—there never can be—successful compromise between good and evil. Only total victory can reward the champions of tolerance and decency and freedom and faith.”

—President Franklin D. Roosevelt

Roosevelt's language was strikingly similar to that used by Christian crusaders in the Middle Ages to describe the Muslims. During the war, Allied leaders recounted the torture and execution of prisoners and the reign of terror imposed on conquered peoples by the Axis as proof that the aggressors were acting far beyond the bounds of civilized behavior. In particular, the American press widely reported atrocities committed by Japanese forces.

The war against the Axis became a crusade. Americans believed that those fighting on behalf of evil—Axis soldiers—were themselves seen as evil. In contrast, U.S. actions, whatever the outcome, were labeled as good. Since the ends of the war effort were defined as the survival of core values, most Americans believed that any and all means were potentially justified, and that only unconditional surrender was acceptable. A decade after the war, a British philosopher condemned the Allied position.

“It was the insistence on unconditional surrender that was the root of all evil.... The connection between such a demand and the need to use the most ferocious methods of warfare will be obvious. And in itself the proposal of an unlimited objective in war is stupid and barbarous. For men to choose to kill the innocent as a means to their ends is always murder.... In the bombing of cities it was certainly decided to kill the innocent as a means to an end.”

—British philosopher Gertrude Anscombe

Question for discussion:

Do you think that it is possible for a democracy to fight a war without portraying the enemy as evil and transforming the war

into a crusade? Are democratic leaders at war more likely to use rhetoric that emphasizes the righteousness of their cause? Compare total wars, such as the Civil War and World Wars I and II, with limited wars such as the Spanish-American War, the Korean War, the Vietnam War, and the Persian Gulf War. Is the rhetoric different?

Suggestions for further research:

1. Investigate Japanese perceptions of the United States during World War II by examining Japanese propaganda and political cartoons. (Begin by reviewing the two political cartoons presented below.) Compare the war-time speeches of Japanese officials with those made by U.S. leaders. Did the Japanese see the war as a crusade to protect their core values against evil?

Japanese Cartoons from World War II



Roosevelt appears as a demon holding a paper promoting democracy and a club which reads dictatorship. He sits atop the Statue of Liberty, from which hang symbols of American decadent behavior.



The true identity of Roosevelt is revealed as demon who wears a skull necklace.

Issue #8: Fifty Years Later—Stamps, Exhibits, and Fresh Controversies

Germany and Japan today are prosperous democracies and two of our country's closest allies. American resentment toward the Germans and the Japanese is more likely to stem from economic competition than from memories of World War II. Yet the final days of the war remain a sensitive subject. When the U.S. Postal Service announced plans to commemorate the fiftieth anniversary of the end of the war in the Pacific by issuing a stamp picturing an atomic bomb explosion, critics in both Japan and the United States loudly voiced their objections. In response, the proposed design for the stamp was replaced by one featuring President Truman and a schematic drawing of an atom.

Much more controversial was an exhibit planned around the *Enola Gay* that was scheduled to open at the Smithsonian Air and Space Museum in Washington, D.C., during the summer of 1995. A draft script for the exhibit was circulated among members of Congress and drew stinging criticism. The strongest protests came from World War II veterans and their supporters. They argued that the emphasis on the bombing of Hiroshima depicted the Japanese as victims of U.S. aggression. They asserted that there was too little attention paid to Japanese atrocities and the surprise attack on Pearl Harbor. Exhibit organizers defended the script as well-balanced. They also noted that photos of Japanese soldiers beheading Chinese civilians and captured Allied prisoners, as well as eyewitness accounts of the heroism of U.S. marines, were to be included in the display. Nonetheless, the director of the Smithsonian ultimately decided to cancel the exhibit and present a scaled-down version to commemorate the end of the war in the Pacific.

The clash over the *Enola Gay* exhibit touches on the role of history in shaping our national identity as Americans. Compared to many nations, the United States has not shied away from re-examining its past with a critical eye. Most U.S. history textbooks, for

example, describe in depth the destruction of Native American cultures by European settlers and the deep-seated racism that served as the foundation of slavery and later discrimination against African-Americans. In contrast, Japanese history textbooks do not give a complete picture of Japan's atrocities in East Asia during World War II.

Questions for discussion:

1. "History," it is said, "is what we want to believe about our past and ourselves." While our country's decision to enter World War II generates little controversy among Americans, the use of the atomic bomb against Japan remains a hotly debated topic. Why?

2. The Smithsonian Institution, established in 1846 by the U.S. government, has grown to become the world's largest museum complex. The Smithsonian's fifteen museums depend on federal funding for their existence. As a public institution, does the Smithsonian have an obligation to present U.S. history in a favorable light? Should American taxpayers have been expected to support an exhibit which would have included a critical view of the U.S. decision to drop the atomic bomb?

Suggestions for further research:

1. Interview several World War II veterans and their family members about the end of the war against Japan. What were their thoughts and feelings when they heard about the attack on Hiroshima and the subsequent surrender of Japan? Do they believe that President Truman was justified in dropping the bombs? Are their opinions about Truman's decision different today from what they were in 1945? Do their opinions differ from those of family members born after the war?

2. Review newspaper and magazine articles on the *Enola Gay* exhibit. Analyze the issues raised in letters to the editor written in response to the articles.

Chronology

1917

- May 25

German warplanes bomb Folkestone, Britain, killing ninety-five civilians.

1937

- April

German Condor Legion bombs Basque town of Guernica in Spanish Civil War.

- August-October

Japanese bomb residential neighborhoods of Shanghai.

- November

Japanese troops terrorize civilian population in “Rape of Nanking.”

1938

- March

German Condor Legion bombs Barcelona in support of fascist rebels.

1939

- September

German warplanes bomb Warsaw to support invasion of Poland.

- September

Nazi Germany launches effort to develop an atomic bomb.

- October

Albert Einstein and Leo Szilard recommend to President Roosevelt that the United States fund research on developing an atomic bomb.

1940

- May

German bombers destroy the city center of Rotterdam in the Netherlands, killing more than one thousand civilians.

- May

American scientists isolate and identify the first element made by humans, neptunium, element 93

- September

Germans begin nine-month air war against Britain, eventually dropping a total of 18,800 tons of explosives. Nazi air attacks claim 20,000 civilian lives in London and 24,000 elsewhere in Britain.

- November

Fourteen German bombers drop 450 tons of explosives on the medieval British city of Coventry, killing 380 civilians.

1941

- January 19

President Roosevelt approves government funding for program to develop an atomic bomb.

- January-February

American scientists isolate and identify the second element made by humans, plutonium, element 94.

- December 7

Japanese warplanes launch a surprise attack from aircraft carriers in the Pacific against the U.S. Pacific Fleet at Pearl Harbor, Hawaii.

1942

- August

U.S. Army establishes the Manhattan Project (officially the Manhattan Engineer District) to oversee development of an atomic bomb.

- September 17

General Leslie Groves is given command of the Manhattan Project.

- October 19

Groves appoints J. Robert Oppenheimer to direct research efforts to develop an atomic bomb.

- December 2

First self-sustaining nuclear chain reaction is achieved at the University of Chicago.

1943

- January

Allies agree they will demand unconditional surrender from the Axis powers.

- February 27

Allied commandos raid Nazi heavy water plant in Vemork, Norway.

- Spring

Facilities are constructed at Oak Ridge, Tennessee, to produce fuel for an atomic bomb by separating the U-235 isotope from the U-238 isotope.

- Summer

Construction begins on atomic piles at Hanford, Washington, designed to produce plutonium for an atomic bomb.

- July 24-28

Allies drop ten thousand tons of explosives to generate a firestorm in Hamburg, Germany, killing more than forty-five thousand civilians.

- October 6

Physicist Niels Bohr arrives in Britain after fleeing Nazi-occupied Denmark.

1944

- July

Twenty-two thousand Japanese civilians kill themselves in a mass suicide on Saipan after U.S. marines capture the island and neighboring Tinian.

- December 17

Plutonium production begins at Hanford, Washington.

1945

- February

Scientists at Los Alamos finalize design for an implosion bomb to be fueled by plutonium.

•February 13

Allied bombers produce a firestorm in Dresden, Germany, killing one hundred thousand civilians.

•February-March

Nearly five thousand U.S. and more than eighteen thousand Japanese soldiers die before American forces capture Iwo Jima.

•March 10

U.S. bombers drop two thousand tons of incendiary explosives on Tokyo to ignite a firestorm that kills more than one hundred thousand civilians.

•Spring

U.S. victory on Okinawa claims the lives of 185,000 Japanese and 12,500 American soldiers—the highest death toll of the Pacific island campaign.

•April 12

Franklin Roosevelt dies in office, leaving the presidency to Harry Truman.

•April

U.S. troops capture German supplies of uranium ore, a German atomic pile, and most of Germany's atomic scientists.

•May 1

Interim Committee formed to advise President Truman on atomic weapons.

•May 8

Germany surrenders unconditionally to the Allies.

•July 16

First atomic bomb, code-named "Trinity," is successfully tested in New Mexico.

•July 24

President Truman approves directive ordering the dropping of atomic bombs against Japan.

•July 26

The leaders of the United States, Britain, and China issue the Potsdam Declaration, threatening "prompt and utter destruction" if Japan does not immediately accept unconditional surrender.

•August 6

The United States drops an atomic bomb fueled with U-235 on Hiroshima. The bomb, code-named "Little Boy," yields an explosive force equivalent to 12,500 tons of TNT and kills approximately 100,000 people.

•August 8

The Soviet Union declares war against Japan and invades northern China the following day.

•August 9

The United States drops an atomic bomb fueled by plutonium on Nagasaki. The bomb, code-named "Fat Man," yields an explosive force equivalent to twenty-two thousand tons of TNT and kills approximately seventy thousand people.

•August 14

Japan announces its surrender.

Biographical Sketches

Niels Bohr (1885-1962)

Born in Denmark and trained as a physicist, Bohr worked with Ernest Rutherford to develop the modern theory of atomic structure, which places the nucleus at the center of a cloud of swirling electrons. Bohr received the 1922 Nobel Prize in Physics for his model of the hydrogen atom with quantized energy levels. The notion of complementarity—the theory that phenomena can be viewed from two mutually exclusive models—was advanced by Bohr to reconcile the wave and particle descriptions of small-body behavior. Bohr’s “liquid drop” model of the nucleus helped scientists understand the process of fission and radioactive decay. Bohr also played a major role in helping German Jewish scientists emigrate from Nazi Germany in the 1930s and later worked to protect Danish Jews from Nazi persecution. Bohr refused to cooperate with Germany’s atomic research program after the Nazis occupied Denmark in 1940. In 1943, Bohr escaped to Sweden. He soon joined the Manhattan Project team at Los Alamos. Even before the first atomic bomb was dropped, Bohr was concerned about the international implications of atomic power. He suggested to Secretary of State James Byrnes and British Prime Minister Winston Churchill that atomic bomb research be placed under international control. Bohr’s proposal, however, was viewed as naive by policymakers.

Vannevar Bush (1890-1974)

A Massachusetts-born electrical engineer, Bush developed an early analog computer to solve problems arising in electrical networks and patented several innovations in the area of electrical engineering. In 1940, Bush was appointed chairman of the National Defense Research Committee and became President Roosevelt’s principal advisor on scientific matters. He was responsible for government-sponsored research on uranium before the beginning of the Manhattan Project. Bush played a critical role in persuading Roosevelt

to make the atomic bomb program a top U.S. priority. In May 1945, he was appointed to serve on the Interim Committee, which was formed to advise Secretary of War Henry Stimson about the status and possible use of the atomic bomb.

James Byrnes (1879-1972)

Born in South Carolina, Byrnes served in the House of Representatives and the Senate before President Roosevelt appointed him to the Supreme Court in 1941. After the United States entered World War II, Byrnes was appointed director of economic stabilization and then director of war mobilization. Byrnes’ power over the U.S. economy led many to informally refer to him as “assistant president” during the war. Byrnes expected that Roosevelt would choose him to run as vice-president in 1944 and was deeply hurt when Roosevelt instead selected Missouri Senator Harry Truman. Although he knew little of foreign affairs, Byrnes was asked to serve as secretary of state under President Truman in April 1945. Byrnes also acted as Truman’s personal representative to the Interim Committee. He dismissed the concerns of Leo Szilard and other leading scientists about the moral and ethical implications of the atomic bomb.

James Chadwick (1891-1974)

A native of Britain, Chadwick worked with Ernest Rutherford to produce artificial nuclear disintegration of the nuclei of light elements using alpha bombardment that led to the identification of the neutron, the last of the three major subatomic particles. Chadwick’s experiments with beryllium and paraffin in 1932 confirmed the existence of the neutron and established its role in initiating nuclear reactions. Chadwick also determined the mass of the neutron. In 1935, Chadwick received the Nobel Prize in Physics. His leadership in investigating nuclear phenomena made him a natural choice to head early British efforts to develop an atomic bomb. The progress of

the British program led the United States to focus greater resources on the atomic bomb. Beginning in 1943, Chadwick led the group of British scientists that worked on the Manhattan Project at Los Alamos.

Arthur Compton (1892-1962)

Born in Ohio, Compton researched X-ray scattering in the 1920s and coined the term “photon” to describe the particle-like behavior of X-rays when they collide with electrons. This phenomenon, known as the Compton effect, earned Compton the Nobel Prize for Physics in 1927. Compton contributed significantly to the Manhattan Project by directing the effort to produce plutonium. With his brother, Karl, then the president of the Massachusetts Institute of Technology and a member of the Interim Committee, Compton was a central figure in the discussions that took place in May 1945 regarding the possible use of the atomic bomb.

James Conant (1893-1978)

Conant was named president of Harvard University in 1933 after teaching organic chemistry at the university for sixteen years. In 1941, Conant was appointed co-chairman, with Vannevar Bush, of the National Defense Research Committee sharing the responsibility for coordinating the U.S. effort to explore and develop the wartime applications of atomic energy. Appointed to the Interim Committee in 1945, Conant predicted that the Soviets would develop an atomic bomb within three or four years and he urged U.S. policymakers to carefully consider the political implications of using an atomic bomb against Japan. In October 1949, Conant joined Robert Oppenheimer in opposing the rapid development of a fusion bomb, fearing that it could become a “weapon of genocide.” Conant returned to Harvard after the war. In 1953, he was appointed U.S. high commissioner for Germany.

Albert Einstein (1879-1955)

Born in Germany, Einstein established himself as the foremost theoretical physicist

of the twentieth century early in his career. In 1921, he received the Nobel Prize for Physics for his explanation of the photoelectric effect in terms of quantized energy. Einstein also published papers that explained Brownian motion using statistical mechanics and presented his theory of relativistic mechanics. The latter, which appeared in 1905, was the first major departure from classical Newtonian mechanics and it enabled scientists to understand and predict atomic and subatomic phenomena. Einstein expressed the inter-relationship of matter and energy in his formula $E=MC^2$ as part of his special theory of relativity. By asserting that mass could be converted into energy, Einstein’s theory explained why large amounts of energy are released when certain radioactive nuclei decay. Einstein’s “General Theory of Relativity,” published in 1915, proposed a connection between space, time, and gravitational fields. Einstein’s pacifist beliefs led the scientist to renounce his German citizenship in 1905 and to become a Swiss citizen. In 1930, Einstein took up permanent residence in the United States. In 1939, he was persuaded by Leo Szilard to write a letter urging President Roosevelt to support atomic research. Einstein, however, was not asked to join in the Manhattan Project because of his pacifist views.

Dwight Eisenhower (1890-1969)

Born in Kansas, Eisenhower was a career army officer through World War II. From 1935 to 1940, he served as an aide to General Douglas MacArthur. Eisenhower’s ability to oversee large-scale projects led to his appointment as chief of army operations in 1942, despite his lack of battlefield experience. In June 1942, Eisenhower was placed in command of U.S. operations in Europe. Eisenhower served as supreme commander of the Allied forces that landed in France in 1944. He continued to lead the Allied forces on the Western Front until the end of the war. On May 7, 1945, Eisenhower announced the unconditional surrender of Germany. Although not a central figure in the decision to drop the atomic bomb, Eisenhower believed that the Japanese

were close to surrendering and voiced his opposition to use of the bomb to both President Truman and Secretary of War Henry Stimson. After the war, Eisenhower served as president of Columbia University and supreme commander of the North Atlantic Treaty Organization (NATO). In 1952, he was elected president of the United States.

Enrico Fermi (1901-1954)

A native of Rome, Fermi was Italy's foremost physicist before World War II, and he received the 1938 Nobel Prize for Physics. Fermi, whose wife was Jewish, immigrated to the United States in January 1939 after Italy's fascist regime instituted discriminatory laws against Jews. Along with Leo Szilard and Albert Einstein, Fermi played a crucial role in bringing the potential of nuclear energy to the attention of the U.S. government. He was a leader in researching nuclear fission and he discovered the importance of moderating substances, such as graphite, heavy water, and paraffin, in generating a self-sustaining nuclear chain reaction. In December 1942, an experimental reactor, or "pile," designed by Fermi at the University of Chicago achieved the first controlled self-sustaining nuclear chain reaction. In 1955, the newly discovered 100th element was named fermium in honor of Fermi.

Leslie Groves (1896-1970)

Born in New York, Groves embarked on a career in the military after graduating from West Point and attending the Massachusetts Institute of Technology. Groves rose rapidly within the Army Corps of Engineers and by December 1941 was responsible for all military construction in the United States, including the construction of the Pentagon building. In September 1942, Secretary of War Henry Stimson appointed Groves to direct the Manhattan Project. Groves oversaw the construction and operation of the project's facilities at Oak Ridge, Tennessee; Hanford, Washington; and Los Alamos, New Mexico. He frequently locked horns with the scientists working on the atomic bomb but generally enjoyed wide-

spread respect. Groves authorized scientists to pursue alternative methods to solve the problems associated with building the bomb. While very expensive, Groves's approach helped the Manhattan Project avoid production bottlenecks. In the closing months of the war, Groves directed the Target Committee, which chose sites for dropping the atomic bomb.

Ernest Lawrence (1901-1958)

Born in South Dakota, Lawrence began working as a physicist at the University of California at Berkeley in 1928. His most important contribution to nuclear physics was the invention of the cyclotron, a device for accelerating charged particles, which opened up new possibilities in nuclear research. The cyclotron allowed scientists to confirm Einstein's prediction that the mass of subatomic particles would increase at very high speeds and led to the creation of radioactive isotopes, such as I-131, which would have medical applications. In 1939, Lawrence was awarded the Nobel Prize for Physics. During the Manhattan Project, huge calutrons—production-scale cyclotrons—were used to separate the U-235 isotope from the more common U-238 isotope. Technical difficulties, however, reduced the potential yield of the approach. The 103rd element, discovered at the University of California at Berkeley, was named lawrencium in honor of Lawrence.

George Marshall (1880-1959)

Born in Pennsylvania, Marshall served on General John Pershing's staff during World War I and was appointed Army chief of staff in 1939. During World War II, Marshall was in charge of developing U.S. military strategy and argued that the United States should initially concentrate its resources on defeating Nazi Germany. Marshall selected most of the U.S. commanders during the war. He was also ultimately responsible for the strategic bombing campaigns in Europe and East Asia and the delivery of the atomic bomb. Appointed secretary of state in January 1947, Marshall played a central role in charting U.S. foreign policy during the early stages of the Cold War.

He was awarded the Nobel Peace Prize in 1953 for his work in establishing the European Recovery Program, popularly known as the Marshall Plan.

J. Robert Oppenheimer (1904-1967)

Son of a German Jewish immigrant, Oppenheimer joined the faculty of the California Institute of Technology in 1928. His research laid the theoretical foundations for the discovery of the positron and for an understanding of the effects produced by cosmic radiation. General Leslie Groves, director of the Manhattan Project, selected Oppenheimer in December 1942 to head scientific efforts to produce an atomic bomb. Oppenheimer established a research facility at Los Alamos, New Mexico, and supervised the largest team of scientists ever assembled. He is credited for balancing the military's emphasis on tight security with the need to maintain an open, cooperative working environment for scientists. Although Oppenheimer strongly supported the Manhattan Project and approved the decision to drop atomic bombs on Japan, he campaigned for international controls on atomic weapons after the war and opposed the development of the fusion bomb.

Ernest Rutherford (1871-1937)

Born in New Zealand, Rutherford worked in Britain at the turn of the century to decipher the structure of the atom. Identifying alpha, beta, and gamma radiation, Rutherford determined that some radioactive elements, like uranium and thorium, break down into other elements. He coined the term "half life" to measure the rate of radioactive decay. Rutherford's findings led to the discovery of isotopes. His experiments with alpha particles allowed him to develop a model of the atomic nucleus. Although he was a physicist, Rutherford received the 1908 Nobel Prize for Chemistry. In 1914, he described and named the proton. Rutherford and his assistant, Hans Geiger, devised a system for measuring radioactivity. In 1917, Rutherford used alpha bombardment to transmute a small number of nitrogen atoms into oxygen atoms, thus carrying out the first nuclear reaction made by humans. During

the 1930s, Rutherford helped German Jewish scientists leave Nazi Germany. He remained skeptical that nuclear reactions could be converted into a practical source of energy.

Glenn Seaborg (1912-1999)

Born in Michigan, Seaborg discovered Pu-240 in 1940 after bombarding U-238 with deuterons in the cyclotron at the University of California at Berkeley. Seaborg predicted that another isotope of plutonium, Pu-239, would be fissionable like U-235 and could be produced as an atomic reactor by-product of U-238. Because plutonium could be more easily produced than U-235 and required a smaller critical mass for a self-sustaining nuclear chain reaction, it has become the preferred weapons-grade fuel for nuclear bombs. Seaborg developed the chemical processes to extract Pu-239 and was responsible for its production at the plutonium reactor built at Hanford, Washington. The output of the plutonium reactor provided fuel for the atomic bombs tested in July 1945 and dropped on Nagasaki the following month. Seaborg and his laboratory staff at the University of California at Berkeley discovered several other transuranic elements from 1944 to 1961. Seaborg was awarded the Nobel Prize for Chemistry in 1951.

Henry Stimson (1867-1950)

Born in New York, Stimson served as secretary of war under President William Howard Taft and secretary of state under President Herbert Hoover. In 1940, President Roosevelt called him out of retirement to be secretary of war. Stimson held the position until the end of World War II and earned widespread respect for coordinating the country's enormous military effort. As secretary of war, Stimson had final authority over the Manhattan Project. Stimson's strong sense of honor led him to raise ethical questions during discussions among U.S. policymakers about the possible use of the atomic bomb against Japan. His extensive diaries constitute one of the best primary sources on U.S. policymaking during World War II.

Leo Szilard (1898-1964)

Born in Hungary, Szilard worked as a physicist in Germany in the early stages of his career. Adolf Hitler's rise to power prompted Szilard, who was Jewish, to immigrate to Britain in 1933. Continuing his research in Britain, Szilard theorized that a self-sustaining nuclear chain reaction could be triggered by secondary neutrons. Szilard sought to patent his idea in Britain, fearing that other countries would apply it to the production of an atomic bomb. Szilard's initial idea, which involved the light element beryllium, was in fact not workable, but the discovery of fission in uranium in 1939 increased the likelihood that scientists would soon be able to trigger a self-sustaining nuclear chain reaction. Szilard's concern that Nazi Germany would be the first country to develop an atomic bomb led him to urge other physicists to limit their publications on nuclear research. He also persuaded Albert Einstein to send a letter, drafted by Szilard, to President Roosevelt to warn the president of the potential threat posed by Germany's atomic program. Szilard worked with Enrico Fermi at the University of Chicago to achieve the first controlled self-sustaining nuclear chain reaction. He later joined the Los Alamos team that produced the atomic bomb. Once the bomb was ready, Szilard argued that it should be demonstrated over uninhabited territory. After the war, Szilard left nuclear research and campaigned for an international ban on nuclear weapons.

Edward Teller (1908-2003)

Born in Hungary, Teller worked as a physicist in Germany in the early stages of his career. Adolf Hitler's rise to power prompted Teller, who was Jewish, to immigrate to the United States in 1933. As a member of the Los Alamos team, Teller developed the theoretical

foundations for the fusion bomb in cooperation with Stanislaw Ulam. Further research on a fusion bomb, known as the "super," was not pursued until the Soviet Union exploded its first fission bomb in August 1949. In response, President Truman appointed Teller to oversee a crash program, headquartered in Berkeley, California, to develop a fusion bomb, despite the opposition of Robert Oppenheimer, James Conant, and other leading scientists. In the 1980s, Teller advocated the development of a space-based laser defense system, popularly known as "Star Wars," to protect the United States from a Soviet nuclear missile attack.

Harry Truman (1884-1972)

Born in Missouri, Truman served in World War I as a captain in the Missouri National Guard and entered state politics after his clothing business failed. In 1934, he was elected to the Senate and strongly supported President Roosevelt's New Deal. During World War II, Truman chaired the Senate committee that oversaw government wartime expenditures. In 1944, President Roosevelt selected Truman as his running mate in his campaign for re-election. Truman was not aware of the atomic bomb project until he became president following Roosevelt's sudden death on April 12, 1945. In July 1945, he gave final approval to drop atomic bombs on Japan. After the war, Truman led U.S. efforts to contain the influence of the Soviet Union by launching the Marshall Plan and establishing the North Atlantic Treaty Organization (NATO). In June 1950, Truman sent U.S. forces to South Korea to counter an invasion by communist North Korea. As president, Truman's desk at the White House featured a plaque that read, "The buck stops here." Truman never expressed regrets about his decision to drop the atomic bomb.

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Ending the War Against Japan: Science, Morality, and the Atomic Bomb

Ending the War Against Japan: Science, Morality, and the Atomic Bomb engages students in the political, military, and ethical questions that entered into the decision to drop atomic bombs on Hiroshima and Nagasaki. The unit explores the origins of atomic physics, and examines the interplay between science and policy that shaped the Manhattan Project.

Ending the War Against Japan: Science, Morality, and the Atomic Bomb is part of a continuing series on current and historical international issues published by the Choices for the 21st Century Education Program at Brown University. Choices materials place special emphasis on the importance of educating students in their participatory role as citizens.

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Ending the War Against Japan: Science, Morality, and the Atomic Bomb



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July 2007

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The Choices for the 21st Century Education Program is a program of the Thomas J. Watson Jr. Institute for International Studies at Brown University.

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Acknowledgments

Ending the War Against Japan: Science, Morality and the Atomic Bomb was developed by the Choices for the 21st Century Education Program with the assistance of the research staff at the Watson Institute for International Studies, scholars at Brown University, and other experts in the field. We wish to thank the following researchers for their invaluable input:

Charles Neu
Professor Emeritus of History, Brown University

George Seidel
Professor Emeritus of Physics, Brown University

John Waghelstein
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We wish to thank Don Bakker for his assistance in developing and writing the first edition of this unit.

Ending the War Against Japan: Science, Morality and the Atomic Bomb is part of a continuing series on international public policy issues. New units are published each academic year and all units are updated regularly.

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THE CHOICES FOR THE 21ST CENTURY EDUCATION PROGRAM is a program of the Watson Institute for International Studies at Brown University. CHOICES was established to help citizens think constructively about foreign policy issues, to improve participatory citizenship skills, and to encourage public judgement on policy issues.



The Watson Institute for International Studies was established at Brown University in 1986 to serve as a forum for students, faculty, visiting scholars, and policy practitioners who are committed to analyzing contemporary global problems and developing initiatives to address them.

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About the Choices Approach

Choices for the 21st Century curricula are designed to make complex international issues understandable and meaningful for students. Using an innovative approach to student-centered instruction, Choices units develop critical thinking and civic judgment—essential ingredients of responsible citizenship.

Understanding the Significance of History: Each Choices unit provides students with a thorough introduction to the topic under consideration. Students gain an understanding of the historical background and the status of current issues. In this way, they see how history has shaped our world. With this foundation, students are prepared to thoughtfully consider a variety of perspectives on public policy.

Exploring Policy Alternatives: Each Choices unit is built around a framework of alternative policy options that challenges students to consider multiple perspectives and to think critically about the issue at hand. Students are best able to understand and analyze the options through a cooperative learning/role-play activity. In groups, students explore their assigned options and plan short presentations. The setting of the role-play may be a Congressional hearing, meeting of the National Security Council, or an election campaign forum. Student groups defend their policy options and, in turn, are challenged with questions from their classmates. The ensuing debate demands analysis and evaluation of the many conflicting values, interests, and priorities reflected in the options.

Exercising Civic Judgment: Armed with fresh insights from the role-play and debate, students are challenged to articulate original, coherent policy options that reflect their own values, priorities, and goals as individuals and citizens. Students' views can be expressed in letters to Congress or the White House, editorials for the school or community newspaper, persuasive speeches, or visual presentations.

Why Use the Choices Approach? Choices curricula are informed by current educational research about how students learn best. Studies have consistently demonstrated that students of all abilities learn best when they are actively engaged with the material rather than listening passively to a lecture. Student-

centered instructional activities motivate students and develop higher-order thinking skills. However, some high school educators find the transition from lecture format to student-centered instruction difficult. Lecture is often viewed as the most efficient way to cover the required material. Choices curricula offer teachers a flexible resource for covering course material while actively engaging students and developing skills in critical thinking, persuasive writing, and informed citizenship. The instructional activities that are central to Choices units can be valuable components in any teacher's repertoire of effective teaching strategies. Each Choices unit includes student readings, a framework of policy options, suggested lesson plans, and resources for structuring cooperative learning, role-plays, and simulations. Students are challenged to:

- recognize relationships between history and current issues
- analyze and evaluate multiple perspectives on an issue
- understand the internal logic of a viewpoint
- engage in informed debate
- identify and weigh the conflicting values represented by different points of view
- reflect upon personal values and priorities surrounding an issue
- develop and articulate original viewpoints on an issue
- communicate in written and oral presentations
- collaborate with peers

Teachers who use Choices units say the collaboration and interaction that take place are highly motivating for students. Opportunities abound for students to contribute their individual talents to the group presentations in the form of political cartoons, slogans, posters, or characterizations. These cooperative learning lessons invite students to take pride in their own contributions and the group product, enhancing students' self-esteem and confidence as learners. Choices units offer students with diverse abilities and learning styles the opportunity to contribute, collaborate, and achieve.

Note to Teachers

Probably no presidential decision in U.S. history has generated more lasting controversy than President Truman's decision to drop atomic bombs on Hiroshima and Nagasaki. Although sixty years have passed since August 1945, the subject continues to spark heated debate in both the classroom and the larger public arena. In many respects, the debate has taken on a life of its own, often divorced from the historical context of World War II.

Ending the War Against Japan: Science, Morality, and the Atomic Bomb has been designed as an interdisciplinary unit. The method and logic of scientific research and their implications for public policy are a focus of the unit, as is the role of political leaders in funding the production of atomic weapons and determining their use. Before addressing the policy debate surrounding the atomic bomb in particular, students assess the relationship between scientific discovery and practical use of that technology during wartime in general.

Suggested Five-Day Lesson Plan: The Teacher Resource Book accompanying *Ending the War Against Japan: Science, Morality, and the Atomic Bomb* contains a day-by-day lesson plan and student activities. The first two lessons of the unit engage students in the moral and ethical challenges facing democratic societies at war. Students weigh military and moral considerations in evaluating a list of potential bombing targets and assess the responsibility of scientists whose research contributed to the total war of the twentieth century. The unit pivots around a simulation that places students within the Truman administration in late July 1945 to evaluate three distinct options for ending the war against Ja-

pan. Finally, eight follow-up discussion topics are offered at the conclusion of the unit to help students understand the legacy of Hiroshima and Nagasaki and to encourage reflection on the policy choices confronting the United States in the nuclear age.

• **Alternative Study Guides:** Each section of reading is accompanied by two distinct study guides. The standard study guide is designed to help students harvest the information provided in the readings in preparation for analysis and synthesis within classroom activities. The advanced study guide requires analysis and synthesis prior to class activities.

• **Vocabulary and Concepts:** The reading in *Ending the War Against Japan: Science, Morality, and the Atomic Bomb* addresses subjects that are complex and challenging. To help your students get the most out of the text, you may want to review with them the "Key Terms" found in the Teacher Resource Book (TRB-25) before they begin their assignment. An "Issues Toolbox" is included on TRB-26. This provides additional information on key concepts of particular importance to understanding the reading.

• **Additional Resources:** Electronic resources and a lesson on the scientific breakthroughs that made the bomb possible are available on the web <http://www.choices.edu/resources/supplemental_bomb.php>.

The lesson plans offered in *Ending the War Against Japan: Science, Morality, and the Atomic Bomb* are provided as a guide. Many teachers choose to devote additional time to certain activities. We hope that these suggestions help you in tailoring the unit to fit the needs of your classroom.

Integrating This Unit into Your Curriculum

Units produced by the Choices for the 21st Century Education Program are designed to be integrated into a variety of social studies courses. Because of the interdisciplinary approach of *Ending the War Against Japan: Science, Morality, and the Atomic Bomb*, science teachers may find a place for the unit in their classrooms as well. Below are a few ideas about where this unit might fit into your curriculum.

World History: The discussion in this unit of the history of warfare offers a useful lens through which to examine world history. The atomic bombs dropped on Hiroshima and Nagasaki were the most powerful weapons used in World War II (or in any war), but they did not signify a drastic escalation in the destructiveness or suffering of the conflict. Rather, atomic weapons represented the culmination of a total war fought with the most advanced technology of the mid-twentieth century. In this unit, students are engaged in an historical survey of the evolution of warfare, military technology, and moral values that extends back to the ancient world. The unit encourages students to explore the relationship between war and international relations in the modern age and the peculiar challenges facing democratic societies at war.

Of course, this unit also fits logically into a study of World War II. The war continues to stand out not only as the most destructive conflict in history but as the watershed event of the twentieth century. *Ending the War Against Japan: Science, Morality, and the Atomic Bomb* invites students to retrace the critical turning points that led to Hiroshima and Nagasaki. Students should also focus special attention on how the brutality of Japan's occupation of China and Germany's campaign against the Soviet Union influenced the attitudes of the Allies toward their enemies. Likewise, the decision of the Allies in 1943 to demand nothing less than unconditional sur-

render from the Axis powers is of particular significance.

United States History: Naturally, the course of World War II and the use of the atomic bomb are central to U.S. history classes. Students might be particularly interested in comparing the leadership and decision-making styles of Roosevelt and Truman. Investigations of the impact of World War II on Americans at the time, as well as our recounting of that event in history books and exhibits today will also yield important discussions. At the end of this unit, students should be able to apply what they have learned to current situations, making useful comparisons and contrasts.

The History of Science: In a conceptual sense, a major step toward the atomic bomb was taken when Einstein's theory of relativity supplanted Newton's laws of physics. The development of the atomic bomb offers students an insight into how modern science advances. It also prepares students for examining the inner workings of other areas of scientific research, from the formulation of Galileo's revolutionary cosmology in the seventeenth century to the current effort to find a cure for AIDS. In addition, this unit serves to illustrate the interconnection of science, politics, ethics, and warfare.

International Relations: As Albert Einstein observed, "The unleashed power of the atom has changed everything—except our way of thinking." Indeed, the nuclear age has been one of unceasing peril, and yet the catastrophe that many predicted following World War II has not occurred. This unit is a natural springboard for a unit on the role of nuclear weapons in international affairs. The U.S. decision to withhold information about the atomic bomb from the Soviet Union segues into a study of the Cold War and international arms control efforts, while the science of the Manhattan Project points toward research on the threat of nuclear proliferation in the developing world and the former Soviet bloc.

Wartime Decisions and Democratic Values

Objectives:

Students will: Define the values surrounding international efforts to regulate war.

Analyze the role of aerial bombardment in modern warfare.

Evaluate the role of ethics in warfare from ancient times to the twentieth century.

Required Reading:

Students should have read “Introduction and Part I” in the student text (pages 1-6) and completed “Study Guide—Part I” (TRB-4) or the “Advanced Study Guide—Part I” (TRB-5).

Handouts:

“Values in Time of War” (TRB-6)

In the Classroom:

1. Group Work—Form groups of three to four students and distribute copies of “Values in Time of War” to each student. Instruct the groups to work collectively to develop their responses to the twelve scenarios presented in the worksheet.

2. Sharing Viewpoints—After the groups have completed the worksheet, call on them to share their responses. Encourage debate among groups with conflicting viewpoints. Ask the groups to discuss how their decisions would be affected by the actions of the enemy. For example, would an enemy attack on a high

school prompt a retaliatory strike? How would the duration of the war affect decision-making? Would students be less likely to justify the bombing of civilian targets in the early stages of a long war? Would the prospect of extensive “collateral damage” (unintended civilian casualties) lead to a change in policy?

3. Establishing the Historical Context—Call on students to review Part I of the reading. Ask them to consider how the “Peace of God” movement and the International Peace Conferences at the Hague influenced the U.S. War Department’s 1940 code of conduct. How did the development of aerial bombardment affect efforts to regulate warfare? How would the list of potential targets have been rated based on the War Department’s code? Ask students to assume the role of President Wilson or British Prime Minister Lloyd George in completing the worksheet.

4. Total War—Call on students to explain the British rationale for the bombing campaign of World War I. Was the decision to bomb German civilians justified by their attacks on British civilians? What were the alternatives?

Homework:

Students should read Part II in the student text (pages 7-16) and complete “Study Guide—Part II” (TRB 8-9) or the “Advanced Study Guide—Part II” (TRB 10-11).

Study Guide—Part I

1. During the Civil War, although President Lincoln was deeply troubled by General Sherman’s campaign through the South, he _____ that the _____ spirit of the _____ had to be _____.
2. Why do democracies have a special problem in deciding what actions should be taken to bring a war to a speedy end?
3. List three international peace agreements and declarations that were signed in the early twentieth century and describe the effect they attempted to have on warfare.

Agreement	Effect

4. Give three examples of technological advances which made warfare more destructive during World War I.

a.
b.
c.
5. List two types of military action in World War I that would have been prohibited under the code of conduct issued by the U.S. War Department in 1940. List two actions that would have been justified according to the principle of “military necessity”.

Prohibited:Justified:

Advanced Study Guide—Part I

1. Why might Rome have felt a total destruction of Carthage was necessary and justified? Are there examples of such policies in more modern times?
2. Why did the principles of the “Peace of God” movement, “Just War,” and the code of chivalry break down during the Crusades and the Thirty Years War?
3. What justified and supported the trend towards “breaking the enemy’s will” and morale following the Napoleonic Wars? Why did this tactic become a military strategy?
4. The 1907 Hague Convention on Land Warfare reinforced the distinction between military and civilian targets. During World War I, however, those distinctions were often ignored. How did advances in military technology increase the suffering of civilians in World War I?
5. A German bomber pilot claimed that the deaths of civilians in war “happen[ed] accidentally.” This claim contradicts the policy wherein both sides bombed towns and cities of little military import. Why might the pilot have made the comment?
6. How did the impact of air warfare in World War I affect the development of military strategy in the 1920s and 1930s?

Values in Time of War

Instructions: Imagine that the members of your group represent the leadership of a democracy fighting a war that has dragged on for several years. Your goals are to win the war quickly and to save the lives of your soldiers. At the same time, you want to conduct the war in a manner that is morally responsible and consistent with the values of your democratic society.

Below is a list of potential bombing targets for your air force. Your assignment is to consider each of the targets in terms of its military significance and moral implications. In short, you are deciding whether the means of aerial bombardment are justified by the ends, or goals, stated above. Rate each potential target on a scale of 1 (completely unjustified) to 10 (completely justified) in the space to the left of the proposed target. Explain your group's reasoning for each rating.

Rating	Proposed Target	Reason for Rating
	Enemy troops in the field	
	Military training camps	
	Factories producing military supplies	
	Homes of civilians working in military factories	
	Food supplies for the military	
	Food supplies for civilians	
	Military hospitals	
	Residential neighborhoods of major cities	
	Trains and ships carrying troops	
	Trains and ships carrying both civilians and troops	
	High schools	
	Universities involved in military-related research	

World War II and the Responsibility of Scientists

Objectives:

Students will: Analyze the contributions of science to twentieth century advancements in military technology.

Assess the moral responsibility of individual scientists in wartime.

Identify the contributions of individual scientists to the Manhattan Project.

Required Reading:

Students should have read Part II in the student text (pages 7-16) and completed “Study Guide—Part II” (TRB 8-9) or the “Advanced Study Guide—Part II” (TRB 10-11).

Handouts:

“Scientists, Patriotism, and Moral Responsibility” (TRB 12-14)

In the Classroom:

1. Group Work—Form groups of three to four students and distribute copies of “Scientists, Patriotism, and Moral Responsibility” to each student. Assign each group one of the three case studies. Instruct the groups to read their assigned case study and respond to the statements presented in the worksheet.

2. Comparing Case Studies—After the groups have completed “Scientists, Patriotism, and Moral Responsibility—Your Viewpoint,” call on them to describe briefly the work of the scientist in their assigned case study and to share their responses to the worksheet. Encourage debate among groups with conflicting viewpoints. Invite them to compare the actions of the three scientists. For example, how do the implications of Weizmann’s “magic bug” compare to those of “mustard gas”?

3. The Manhattan Project—Ask students to compare the actions of Weizmann, Haber, and Jones to the scientists of the Manhattan Project. For example, was Robert Oppenheimer morally responsible for the deaths caused by the atomic bomb? Note that Albert Einstein was not asked to participate in the Manhattan Project because of his pacifist beliefs. Was Einstein’s stance morally responsible in light of the threat posed by the Axis powers?

4. Assessing Responsibility—Call on students to review the key scientific breakthroughs presented in Part II of the reading. Were the breakthroughs a product of individual genius or a collective effort of the Los Alamos team? Ask students to discuss the choices the scientific community made during the development of the atomic bomb. Should scientists have declared a moratorium on atomic research in the late 1930s? Should the Los Alamos team have abandoned the Manhattan Project en masse after the surrender of Nazi Germany? Would such actions have had a lasting impact on the development of nuclear weapons? What would have been the potential dangers of such a stance? What does the state of current research on genetic engineering and stem cells tell us about the prospects for imposing restrictions on scientific progress for ethical reasons?

Homework:

Students should read “July 1945: The Moment of Decision” in the student text (pages 17-20). Student should also read the “Options in Brief” on page 21.

Study Guide—Part II

1. Fill in the box below listing the pros and cons of nighttime vs. daytime bombing raids.

	Daytime	Nighttime
Pros		
Cons		

2. Why did Nazi Germany use aerial bombardment against the Allies during the early years of World War II?

3. What was the purpose of the Allied campaign of “strategic bombing”?

4. What was the “firestorm formula” and what effect did it have on the German cities of Hamburg and Dresden?

Name: _____

5. What factors contributed to the ferocity of Japanese resistance to American forces on Saipan, Iwo Jima, and Okinawa?

6. Why did American casualties keep rising as U.S. forces moved closer to Japan?

7. Why did the U.S. government decide to make an atomic bomb?

8. Identify three major problems scientists faced in making the bomb.

a.

b.

c.

Advanced Study Guide—Part II

1. What was the role of aerial bombardment in Nazi Germany's military strategy during the early years of World War II?
2. In July 1940, British Prime Minister Winston Churchill concluded that Britain's only hope for defeating Nazi Germany was "an absolutely devastating, exterminating attack by very heavy bombers from this country upon the Nazi homeland." In your opinion, was Churchill's judgement correct? What were Churchill's alternatives?
3. How did Japan's military actions from 1937 to the early months of 1942 shape American attitudes toward the Japanese?

Name: _____

4. What do the two political cartoons below suggest about the difference in American perceptions of German aggression and Japanese aggression?



5. What factors contributed to the ferocity of Japanese resistance to American forces on Saipan, Iwo Jima, and Okinawa?

Scientists, Patriotism, and Moral Responsibility

Instructions: After you have read your assigned case study, respond to the statements on page 14 with the other members of your group. Be prepared to share your group's views with the class.

Case Study #1: Chaim Weizmann and the Magic Bug

Chaim Weizmann immigrated to Britain from Russia in 1904. In the course of his research on synthesizing dyes and other organic chemicals, Weizmann discovered bacteria which had the ability to digest common starch and produce acetone and butyl alcohol—two organic chemicals. At the time, scientists considered the new “bug” (named bacillus Weizmann) an oddity without any practical use. The beginning of World War I, however, was to place Weizmann’s bug at the center of Britain’s wartime strategy.

Acetone was an essential ingredient in cordite, the propellant used in British naval guns. (Cordite, a complex chemical mixture, had been designed to burn at a controlled rate in driving a shell out of the long barrel of the navy’s heavy guns. A faster burning propellant would have generated more heat and caused the gun barrels to wear out more quickly.) While acetone made up less than 1 percent of cordite’s ingredients, the British navy was expected to require thousands of tons of acetone during the war. British industry was unable to meet the demand with the existing technology. British officials feared that an acetone shortage would endanger their country’s control of the seas — the backbone of Britain’s defenses.

After the British War Office appealed to Britain’s scientists to aid the war effort, Weizmann stepped forward to offer his magic bug, which up until then had only produced small quantities of acetone. Winston Churchill, then first lord of the British Admiralty, arranged for six large distilleries to be placed under Weizmann’s supervision. By the end of the war, Weizmann’s bacteria had produced several hundred thousand tons of acetone.

With adequate supplies of cordite, the British navy succeeded in maintaining its mastery

of the seas during World War I. The outnumbered and outgunned German navy seldom ventured beyond the safety of German harbors. As a result, the British were able to impose an effective sea blockade against their enemy. Germany’s ocean-going trade was strangled, preventing the Germans from importing vital military supplies. As the war progressed, the British began to block food from reaching Germany. The toll on German civilians was enormous. By the end of World War I, roughly seven hundred thousand people had died from starvation and disease caused largely by the British blockade.

Case Study #2: Fritz Haber and Mustard Gas

Fritz Haber, one of the foremost German chemists of the twentieth century, played a crucial role in giving Germany the world’s leading chemical industry in the years before World War I. Haber’s process for producing ammonia from the nitrogen found in air freed Germany from dependence on foreign sources of nitrates for fertilizers and explosives. In 1911, Haber was appointed director of the Kaiser Wilhelm Institute for Chemistry—the most prestigious position in his field. When World War I broke out, he enlisted in the German army and received the rank of sergeant.

In early 1915, the German High Command asked Haber to oversee the development of a more effective poison gas. By that time, the confrontation on the Western Front had settled into bloody trench warfare. Both sides were eager to break the stalemate. The French had been the first to use poison gas. They had fired rifle grenades filled with tear gas in the first month of the war to halt the German advance. Five months later, in January 1915, the Germans lobbed artillery shells filled with tear gas at Allied positions. In fact, France and Germa-

ny were among the leading powers which had pledged in the 1899 Hague Convention not to use poison gas. The treaty required nations “to abstain from the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases.”

Haber agreed to direct Germany’s poison gas research. He hoped that the breakthroughs he achieved in the laboratory would shorten the war and save lives. On April 22, 1915, Haber’s poison gas was used for the first time on the battlefield. With the wind blowing toward the Allied lines on the Belgian front, the Germans released large canisters of chlorine gas, which burns the lungs when inhaled and the eyes on contact. The impact was dramatic. Thousands of Canadian and French African troops fled from their trenches as the yellow-green cloud of chlorine settled over them. The Allied line was broken, but the Germans failed to follow up on the opportunity.

The German gas attack prompted both sides to focus research on producing still deadlier forms of poison gas. Haber was responsible for overseeing the development of the most toxic gas of the war, known as mustard gas. Mustard gas, which acquired its name because it smelled like mustard, ate through the rubber of gas masks and resulted in blindness on contact. Even very small quantities of the gas, which soaked into clothing, were potent. Soldiers exposed to the gas often brought traces of it back to their trenches, thereby injuring their comrades.

More than two hundred thousand tons of poison gas were produced in World War I. At least one million soldiers on both sides of the conflict were either killed or suffered permanent injuries in gas attacks.

Case Study #3: R. V. Jones and Oboe

R.V. Jones was a young physics student at Oxford College working on the properties of radio beams in the years before World War II. In 1939, Jones was appointed head of Scientific Intelligence for the British Air Ministry. Jones’s work early in the war focused on

designing electronic methods to defend British cities and military installations from German air attacks. When the British air force went on the offensive in late 1941 and 1942, Jones was put in charge of efforts to minimize aircraft losses in British bombing missions over Germany.

The experience of the German Luftwaffe during the London blitz of 1940-41 provided valuable lessons for the British Air Ministry. To avoid the high losses the Luftwaffe suffered during its daylight bombing raids, the British planned to carry out most of its bombing operations at night. They also realized that cloud cover and navigational error made even daylight bombing highly inaccurate. Many of the Luftwaffe’s bombs, for example, fell on the British countryside during the blitz. A study by the British in 1942 revealed that nearly 90 percent of the bombs dropped by their own aircraft had missed their targets by at least a mile.

Jones’s most important contribution to the British war effort was the development of a more effective electronic navigational system to improve the accuracy of British bombers. His most successful design was code-named “oboe.”

Oboe was based on the same physics principle used by the British in developing radar. Two high-frequency radio stations in different locations in Britain sent out pulsating radio waves. The signals were then picked up by specially equipped “pathfinding” aircraft and bounced back to the sending stations. By timing the pulse delay, British air controllers at the sending station could calculate to within a fraction of a mile the distances from the plane to each of the radio stations. With this information, the controllers applied simple geometry to determine the precise location of the plane.

The oboe system allowed British air controllers to guide pathfinder planes carrying special marker bombs over German targets. The controllers were then able to issue electronic commands to release the marker bombs. The explosions and fires produced on

the ground by the marker bombs gave other bomber pilots a visual target at which to aim. Jones's system proved unequaled during World War II.

The devastation of the Allied strategic

bombing campaign against Germany owed much to Jones's efforts. By early 1945, Allied bombing had crippled many of Germany's war industries and had killed or injured more than five hundred thousand German civilians.

Scientists, Patriotism, and Moral Responsibility Your Viewpoint

Answer the following questions in your group by indicating "strongly agree" (SA), "agree" (A), "disagree" (D), or "strongly disagree" (SD) in the space to the left. Be prepared to share your answers with the class.

___ Like all citizens, scientists have the duty to use their skills to help their country in time of war.

___ Scientists bear moral responsibility for the suffering that results from their discoveries.

___ Bombs don't kill people. People kill people.

___ People must strive to reduce human suffering, even in time of war.

___ Defending one's country is one of the most important civic values.

___ Science seeks to understand nature. As such, it is neither good nor bad, moral nor immoral.

___ The actions of the scientist featured in our group's case study were morally responsible.

___ I would have acted in the same manner as the scientist featured in our group's case study.

Role Playing the Three Options: Organization and Preparation

Objectives:

Students will: Identify the underlying values that influenced the Truman administration.

Integrate the arguments and beliefs of the options and the reading into a persuasive, coherent presentation.

Work cooperatively within groups to organize effective presentations.

Required Reading:

Students should have read “July 1945: The Moment of Decision” in the student text (pages 17-20) and the “Options in Brief” on page 21.

Handouts:

“Presenting Your Option” (TRB-16) for option groups

“The Scientific Perspective” (TRB-17) for the Los Alamos team

“The Truman Administration” (TRB-18) for Truman administration officials

In the Classroom:

1. The Setting—Call on students to review the factors that influenced U.S. decision-making regarding the use of the atomic bomb. How would the American public in late July 1945 have ranked the six factors? How would the perceptions of the general public have differed from those of Truman administration officials or American soldiers in the Pacific?

2. Planning for Group Work—In order to save time in the classroom, form student groups before beginning Day Three. During the class period of Day Three, students will be preparing for the Day Four simulation. Remind them to incorporate the reading into the development of their presentations and questions.

3a. Option Groups—Form three groups of four students. Assign an option to each group. Distribute “Presenting Your Option” to

the three option groups. Inform students that each option group will be called upon on Day Four to present the case for its assigned option to officials from the Truman administration. Explain that option groups should follow the instructions in “Presenting Your Option.” Note that the option groups should begin by assigning each member a role.

3b. Los Alamos Team—Form a group of four students to represent the scientists of the Manhattan Project. Distribute “The Scientific Perspective” to the group. Inform the Los Alamos team that they will be called upon on Day Four to explain the scientific implications of the atomic bomb to officials from the Truman administration. Explain that the Los Alamos team should follow the instructions in “The Scientific Perspective.”

3c. Truman Administration Officials—The remainder of the class will serve as officials from the Truman administration. Distribute “The Truman Administration” to each official. While the other groups are preparing their presentations, Truman administration officials should develop cross-examination questions for Day Four. (See “The Truman Administration.”) Remind officials that they are expected to turn in their questions at the end of the simulation.

Suggestions:

In smaller classes, other teachers or administrators may be invited to serve as Truman administration officials. In larger classes, students may be assigned the roles of specific historical figures, such as Albert Einstein or Leslie Groves.

Ask the groups to design a poster illustrating the best case for their option.

Homework:

Students should complete preparations for the simulation.

Presenting Your Option

The setting: It is late July 1945. Nazi Germany has surrendered and Japan's island empire in the Pacific has been smashed. A few days ago, scientists in New Mexico successfully tested a powerful new weapon—an atomic bomb—to further strengthen our country's arsenal.

Your assignment: Your group should seek to persuade the Truman administration that your option represents the best approach to ending the war against Japan. After reading your option, answer the questions below from the viewpoint of your option. On Day Four, your group will be called upon to present a persuasive three-to-five minute summary of your option to administration officials. This worksheet will help you prepare your presentation.

Organizing your group: Each member of your group will take a specific role. Below is a brief explanation of the responsibility of each role. Before preparing your sections of the presentation, work together to address the questions below. The **group director** is responsible for organizing the presentation of your group's option to the Truman administration officials. The **military expert** is responsible for advising how the military situation supports your group's option. The **foreign policy expert** is responsible for advising why your group's option best addresses U.S. foreign policy interests. The **historian** is responsible for advising how the lessons of history justify your group's option. Keep in mind that your group's presentation may include only information that was available in late July 1945.

Questions

1. What will be the impact of your option on future American casualties in the war?
2. What position does your option take on the policy of insisting on Japan's unconditional surrender?
3. How will your option affect U.S. relations with the Soviet Union?
4. How will your option influence the future direction of the atomic age?
5. How does your option promote American values?
6. In summary, why should the Truman administration adopt your option?

The Scientific Perspective

The setting: It is late July 1945. Nazi Germany has surrendered and Japan's island empire in the Pacific has been smashed. A few days ago, scientists in New Mexico successfully tested a powerful new weapon—an atomic bomb—to further strengthen our country's arsenal.

Your assignment: Your group represents the team of scientists at Los Alamos who developed the atomic bomb. You have been called upon to explain your work to the Tru-

man administration in a three-to-five minute presentation on Day Four. Your job is not to voice your opinion concerning if and how the atomic bomb should be used. Rather, you are expected to inform administration officials about the underlying scientific principles and likely effects of the bomb. Keep in mind that your group's presentation should be made from the perspective of late July 1945. This worksheet will help you prepare your presentation.

Questions

1. What makes the atomic bomb different from other powerful bombs?
2. Why did the United States need to spend more than \$2 billion to produce the atomic bomb?
3. What would be the likely impact of dropping an atomic bomb on a Japanese city? (To help your group answer this question, see "Issue #6: Radiation, Fallout, and Atomic Testing" on pages 43-44 of the student text.)
4. Why has no other country, such as Germany or the Soviet Union, been able to produce an atomic bomb? Do you expect that other countries will soon develop atomic weapons?

The Truman Administration

The setting: It is late July 1945. Nazi Germany has surrendered and Japan's island empire in the Pacific has been smashed. A few days ago, scientists in New Mexico successfully tested a powerful new weapon—an atomic bomb—to further strengthen our country's arsenal.

Your assignment: As a high-ranking official within the Truman administration, you are among a handful of people who know of the existence of the atomic bomb. You and your colleagues have been brought together to determine if and how the atomic bomb should be used in ending the war against Japan. On Day Four, you will be introduced to three distinct policy options regarding the bomb. You will also hear from the scientists who produced the bomb.

After the option groups and the scientists have delivered their presentations, you and your colleagues will have an opportunity

to question the option groups. You should prepare two questions regarding each of the options. Your teacher will collect these questions at the end of Day Four. Keep in mind that your questions should reflect only information that was available in late July 1945.

Your questions should be challenging and critical. For example, a good question for Option 1 might be:

What do you foresee for the future of U.S.-Japanese relations if Japan's wartime leaders are allowed to remain in power?

On Day Four, the four option groups will present their positions. After their presentations are completed, your teacher will call on you and the other residents to ask questions. The "Evaluation Form" you will receive is designed for you to record your impressions of the options. After this activity is concluded, you may be called upon to explain your evaluation of the option groups.

Role Playing the Three Options: Debate and Discussion

Objectives:

Students will: Articulate the leading values that framed the debate on ending the war.

Explore, debate, and evaluate multiple perspectives on U.S. wartime policy in late July 1945.

Cooperate with classmates in staging a persuasive presentation.

Clarify their own views regarding the use of the atomic bomb.

Handouts:

“Evaluation Form: Truman Administration” (TRB-20) for Truman administration officials

In the Classroom:

1. Setting the Stage—Organize the room so that the three option groups and the Los Alamos scientists face a row of desks reserved for the Truman administration officials. Explain that the simulation will begin with three-to-five minute presentations by the option groups, followed by the Los Alamos team. Encourage the presenters to speak clearly and convincingly.

2. Managing the Simulation—Following the presentations, invite administration officials to ask cross-examination questions. Make sure that each official has an opportunity to ask at least one question. The questions should be evenly distributed among all three option groups. During cross-examination, allow any option group member to respond. (As an alternative approach, permit cross-examination after the presentation of each option.)

3. Guiding Discussion—After concluding the simulation, invite Truman administration officials to offer their views of the three options. Call on other students to share their opinions. Focus the discussion on the six factors highlighted in “July 1945: The Moment

of Decision.” For example, which option was most likely to minimize American casualties? Which option best addressed the challenges of U.S.-Soviet relations? Which option most accurately reflected core American values? Explain that prominent scientists from the Manhattan Project, including Robert Oppenheimer, Arthur Compton, and Enrico Fermi entered the policy debate as members of the Interim Committee on Atomic Energy. Note also that the Franck Report, issued in June 1945 by Manhattan Project scientists based in Chicago, recommended that the United States first demonstrate the power of the atomic bomb to Japanese leaders.

4. Student Views—Ask students to put themselves in the shoes of Truman administration officials in late July 1945. How, if at all, should the United States have used the atomic bomb against Japan? What values and assumptions would have influenced their decision? What lessons from history would have been uppermost in their minds? Should the American people have had a greater voice in deciding if and how the atomic bomb would be used?

Extra Challenge:

Instruct students to write a policy memorandum summarizing their positions concerning if and how the atomic bomb should have been used to end the war against Japan. Remind students that their arguments must be based only on information available in late July 1945.

Homework:

Students should read “Epilogue: The Decision and the Consequences” in the student text (pages 31-34) and complete “Study Guide—Epilogue” (TRB 22-23) or “Advanced Study Guide—Epilogue” (TRB-24).

Evaluation Form: Truman Administration

Instructions: Answer the questions below following the simulation.

1. According to each option, what should President Truman do?

Option 1:

Option 2:

Option 3:

2. According to each option, what are the most important issues to consider?

Option 1:

Option 2:

Option 3:

3. Which of the three options would you support most strongly? Explain your reasoning.

The Legacy of Hiroshima and Nagasaki

Objectives:

Students will: Evaluate the impact of Hiroshima and Nagasaki on postwar international relations.

Identify connections between the concluding events of World War II and current U.S. foreign policy.

Required Reading:

Students should have read “Epilogue: The Decision and the Consequences” in the student text (pages 31-34) and completed “Study Guide—Epilogue” (TRB 22-23) or “Advanced Study Guide—Epilogue” (TRB-24).

Handout:

“Making Connections—Issues Raised by the Atomic Bomb” (student text pages 35-47)

In the Classroom:

1. Analyzing the Postwar World—Call on students to discuss how the U.S. decision to drop atomic bombs on Hiroshima and Nagasaki changed the course of history. How might today’s world be different if other options had been pursued? How have American values changed in the sixty years that have passed since the end of World War II?

2. Making Connections—Form eight groups of two to four students. Distribute “Making Connections—Issues Raised by the Atomic Bomb” to each student and assign each group one of the eight issues. Instruct each group to review its assigned issue and develop a collective response to the “Questions for Discussion.” After the groups have completed their responses, challenge them to relate the issues they have studied to the following current U.S. foreign policy questions: the use of force internationally; nuclear weapons policy; relations with Russia, China, and other great powers; and, the U.S. image in international affairs. For example, how do the positions presented in “Issue #1: The Moral Responsibility for Using the Bomb” apply to U.S. policy toward the use of force in Iraq, or during the war in Afghanistan? How have the facts of “Issue #6: Radiation, Fallout, and Nuclear Testing” affected international efforts to ban the testing of nuclear weapons? Call on the groups to take the lead in linking their assigned issues to current U.S. foreign policy.

Homework:

Students should respond to a topic from “Suggestions for Further Research.”

Study Guide—Epilogue

1. What was the purpose of the Potsdam Conference?
2. List the four leaders in attendance at Potsdam and their countries.

Leader	Country

3. What was the ultimatum that the leaders issued to Japan at the end of the Potsdam Conference?
4. Why did Japanese leaders reject that Potsdam Conference ultimatum?

Name: _____

5. Fill in the chart below about the bombing of Hiroshima and Nagasaki.

	Date	Bomb Name	Number of Casualties
Hiroshima			
Nagasaki			

6. How were the people of Nagasaki warned about the possibility of an atomic attack? Why were the warnings largely ignored?

7. When was a third bomb likely to be delivered for use?

8. President Truman ordered continued _____ of Japanese cities using conventional _____. On the night of August 14, _____ B-29s bombed Tokyo in one of the largest _____ raids of the war. That same day, Japan's leaders indicated that they were willing to accept the terms of the _____ and surrender _____.
 World War II was over.

Advanced Study Guide—Epilogue

1. Summarize the debate within the Japanese government over the Potsdam Declaration. Do you think that a fuller description of the atomic bomb's power in the declaration would have influenced Japan's decision? Explain your answer.
2. Although the number of deaths resulting from the attack on Hiroshima was comparable to the death tolls resulting from the firebombings of Hamburg, Dresden, and Tokyo, the death rate was much higher. Why was the atomic bomb deadlier than conventional bombs?
3. The eyewitness accounts by survivors of Hiroshima tell of horrible suffering. How would their recollections have differed from those of the survivors of bombing attacks on Warsaw, London, Hamburg, or Dresden?
4. How was the decision made to drop the atomic bomb on Nagasaki? Why did the people of Nagasaki fail to evacuate the city after the United States warned them of the attack?
5. If the Japanese had not surrendered on August 14, 1945, should the United States have continued to drop atomic bombs on Japan? Explain your reasoning.
6. Assess the following statement: "The primary purpose of the atomic bomb was neither to cause damage or to kill Japanese, but to shock the Japanese government into realizing the futility of continuing the war. The bomb was successful in achieving its purpose, and many Japanese lives were saved as a result."

Key Terms

Introduction and Part I

democracy
ends-means dilemma
pacifism
chivalry
mercenary
inhumane
aerial bombardment
treaty
submission
noncombatant
belligerent

Part II

blitzkrieg
strategic bombing
firestorm
carpet bombing
sphere of influence
atrocity
neutrality
annihilation
bushido
kamikaze
nuclear energy
consolidate

Moment of Decision

Lend/Lease aid
militarism

Issues Toolbox

Atomic Energy

Atomic energy is derived from the splitting or combining of particles within the nucleus of an atom. In the first type of reaction, called fission, energy is emitted as the nucleus is split. In the second type, fusion, a small amount of mass turns into energy as a result of the reaction and the heat and pressure needed to create it. This transfer of mass into energy is described in Einstein's famous equation $E=MC^2$. Nuclear reactors in the United States use fission to heat water to turn turbines, and the radioactive by-products are usually buried in lead containers to prevent contamination of the environment. The energy of an atomic bomb is measured in units of the explosive TNT, a comparison similar to a car's power measured in horsepower. The enormous amount of energy released in a single atomic bomb can level an entire city in minutes; in contrast, hundreds of sorties and several hours are needed to achieve a similar result with traditional bombs.

Just War Theory

Following World War I, a particularly brutal and shocking war in which almost an entire generation of young European men was wiped out, several leaders adopted policies that they hoped would ensure such war would not occur again. At the start of World War II these ideas were adjusted to allow for "just war" (a concept originally from the Middle Ages), war which was morally justified and fairly fought. Although both the Allies and the Axis used deadly means which surpassed those of World War I, the Allies believed they were fighting ultimate evil and that therefore their means were justified. World War II came to be known as a "just war."

Total War

A total war engages civilians in addition to soldiers and involves whole nations rather than small regions. Civilians support the war efforts by making items useful to the troops, assisting at the battlefields as medics or messengers, or even participating in combat themselves. In total war civilians are often intentional targets as well. Patriotism and a sense of duty help charge troops and a nation's industry is often conscripted to assist with the war effort. In this way an entire nation is affected. World War II is an example of total war, whereas the Falklands War between Argentina and Great Britain would not qualify.

Military Necessity

First discussed in the wake of World War I, the concept of military necessity asserted that any use of force which was applied fairly and humanely was justified as long as its objective was to compel the enemy's surrender with the least amount of time spent and lives lost. During World War II "military necessity" came to include events such as firebombing cities.

Making Choices Work in Your Classroom

This section of the Teacher Resource Book offers suggestions for teachers as they adapt Choices curricula to their classrooms. They are drawn from the experiences of teachers who have used Choices curricula successfully in their classrooms and from educational research on student-centered instruction.

Managing the Choices Simulation

Recognize Time Limitations: At the heart of the Choices approach is the role-play simulation in which students advocate different options, question each other, and debate. Just as thoughtful preparation is necessary to set the stage for cooperative group learning, careful planning for the presentations and debate can increase the effectiveness of the simulation. Time is the essential ingredient to keep in mind. A minimum of 45 to 50 minutes is necessary for the presentations and debate. Hence, if only one class period is available, student groups must be ready as soon as class begins. Teachers who have been able to schedule a double period or extend the length of class to one hour report that the extra time is beneficial. When necessary, the role-play simulation can be run over two days, but this disrupts the momentum of the debate. The best strategy for managing the role-play is to establish and enforce strict time limits, such as five minutes for each option presentation, ten minutes for questions and challenges, and the final five minutes of class for wrapping up the debate. It is crucial to make students aware of strict time limits as they prepare their presentations.

Highlight the Importance of Values: During the debate and debriefing, it is important to highlight the role of values in the options. Students should be instructed to identify the core values and priorities underlying the different options. The “Presenting Your Option” worksheet is designed to help students incorporate the values into their group presentations. You may also find the supplemental activity, *Considering the Role of Values in Public Policy*,

available from the “Faculty Room” on the Choices web site <www.choices.edu> helpful.

Moving Beyond the Options

As a culminating activity of a Choices unit, students can be expected to articulate their own views of the issue under consideration. An effective way to move beyond the options debate to creating individual options is to have students consider which values in the options framework they hold most dear. Typically, students will hold several of these values simultaneously and will need to prioritize them to reach a considered judgment about the issue at hand. These values should be reflected in their own options and should shape the goals and policies they advocate.

Adjusting for Large and Small Classes

Choices units are designed for an average class of twenty-five students. In larger classes, additional roles, such as those of newspaper reporter or member of a special interest group, can be assigned to increase student participation in the simulation. With larger option groups, additional tasks might be to create a poster, political cartoon, or public service announcement that represents the viewpoint of an option. In smaller classes, the teacher can serve as the moderator of the debate, and administrators, parents, or faculty can be invited to play the roles of congressional leaders. Another option is to combine two small classes.

Assessing Student Achievement

Grading Group Assignments: Research suggests that it is counterproductive to give students individual grades on cooperative group assignments. A significant part of the assignment given to the group is to cooperate in achieving a common goal, as opposed to looking out for individual interests. Telling students in advance that the group will receive one grade often motivates group members to hold each other accountable. This can foster

group cohesion and lead to better group results. It may be useful to note that in addition to the cooperative group assignments, students complete individual assignments as well in every Choices unit. The “Assessment Guide for Oral Presentations” on the following page is designed to help teachers evaluate group presentations.

Requiring Self-Evaluation: Having students complete self-evaluations is an extremely effective way to make them think about their own learning. Self-evaluations can take many forms and are useful in a variety of circumstances. They are particularly helpful in getting students to think constructively about group collaboration. In developing a self-evaluation tool for students, teachers need to pose clear and direct questions to students. Two key benefits of student self-evaluation are that it involves students in the assessment process, and that it provides teachers with valuable insights into the contributions of individual students and the dynamics of different groups. These insights can help teachers to organize groups for future cooperative assignments.

Evaluating Student Options: One important outcome of a Choices unit are the original options developed and articulated by each student. These will differ significantly from one another, as students identify different values and priorities that shape their viewpoints. These options cannot be graded as right or wrong, but should be evaluated on clarity of expression, logic, and thoroughness. Did the student provide reasons for his/her viewpoint

along with supporting evidence? Were the values clear and consistent throughout the option? Did the student identify the risks involved? Did the student present his/her option in a convincing manner?

Testing: In a formal evaluation of the Choices approach, it was demonstrated that students using Choices learned the factual information presented as well as or better than students who were taught in a more traditional lecture-discussion format. However, the larger benefits of the Choices approach were evident when students using Choices demonstrated significantly higher ability to think critically, analyze multiple perspectives, and articulate original viewpoints, compared to students who did not use this approach. Teachers should hold students accountable for learning historical information, concepts, and current events presented in Choices units. However, a simple multiple-choice examination will not allow students to demonstrate the critical thinking and communication skills developed through the Choices unit. If teachers choose to test students, they may wish to explore new models of test design that require students to do more than recognize correct answers. Tests should not replace the development of student options.

For Further Reading: Cohen, Elizabeth G. *Designing Groupwork: Strategies for the Heterogeneous Classroom* (New York: Teachers College Press, 1986).

Assessment Guide for Oral Presentations

Group assignment: _____

Group members: _____

Group Assessment	<i>Excellent</i>	<i>Good</i>	<i>Average</i>	<i>Needs Improvement</i>	<i>Unsatisfactory</i>
1. The group made good use of its preparation time	5	4	3	2	1
2. The presentation reflected analysis of the issues under consideration	5	4	3	2	1
3. The presentation was coherent and persuasive	5	4	3	2	1
4. The group incorporated relevant sections of the reading into its presentation	5	4	3	2	1
5. The group's presenters spoke clearly, maintained eye contact, and made an effort to hold the attention of their audience	5	4	3	2	1
6. The presentation incorporated contributions from all the members of the group	5	4	3	2	1
Individual Assessment					
1. The student cooperated with other group members	5	4	3	2	1
2. The student was well-prepared to meet his or her responsibilities	5	4	3	2	1
3. The student made a significant contribution to the group's presentation	5	4	3	2	1

Alternative Three-Day Lesson Plan

Day 1:

See Day One of the Suggested Five-Day Lesson Plan. (Students should have read Introduction and Part II of the reading and completed “Study Guide—Part II” before beginning the unit.) Students should read “July 1945: The Moment of Decision” as homework.

Day 2:

Assign each student one of the three options, and allow a few minutes for students to familiarize themselves with the mindsets of the options. Call on students to evaluate the benefits and trade-offs of their assigned options. How do the options differ in their attitudes toward the U.S. role in the postwar world and the impact of nuclear weapons on international relations? Ask students to explain how each of the options views the six factors explained in “July 1945: The Moment of Decision.” Moving beyond the options, ask students to imagine that they had been a top official in the Truman administration in late July 1945. What would have been their advice regarding the use of the atomic bomb? Which factors would have most influenced their decisions?

Homework: Students should read “Epilogue: The Decision and the Consequences” and complete the accompanying study guide.

Day 3:

See Day Five of the Suggested Five-Day Lesson Plan.

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U.S. Constitutional Convention ■ New England Slavery
War of 1812 ■ Spanish American War
League of Nations ■ FDR and Isolationism
Hiroshima ■ Origins of the Cold War
Cuban Missile Crisis ■ Vietnam War

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